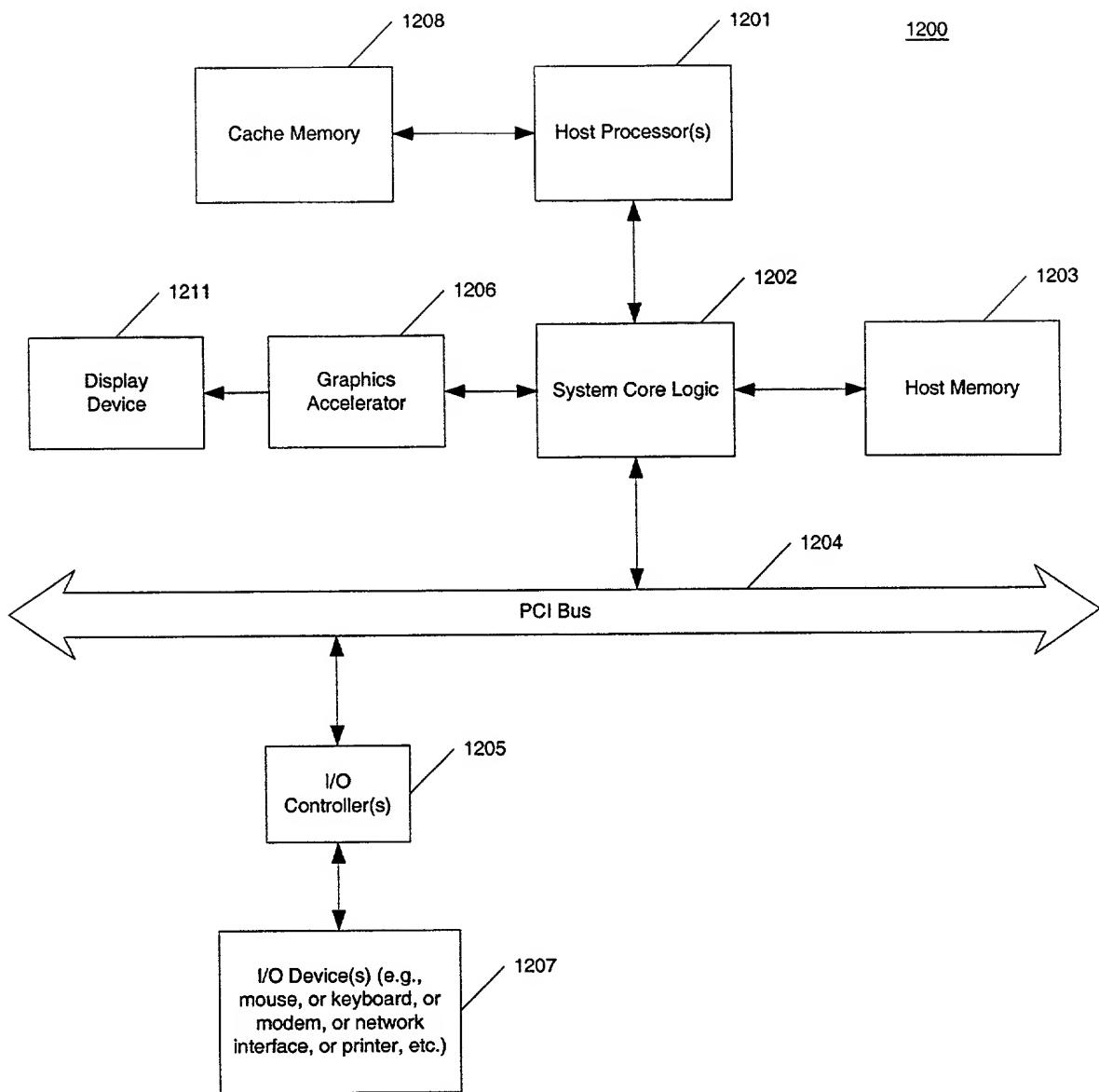
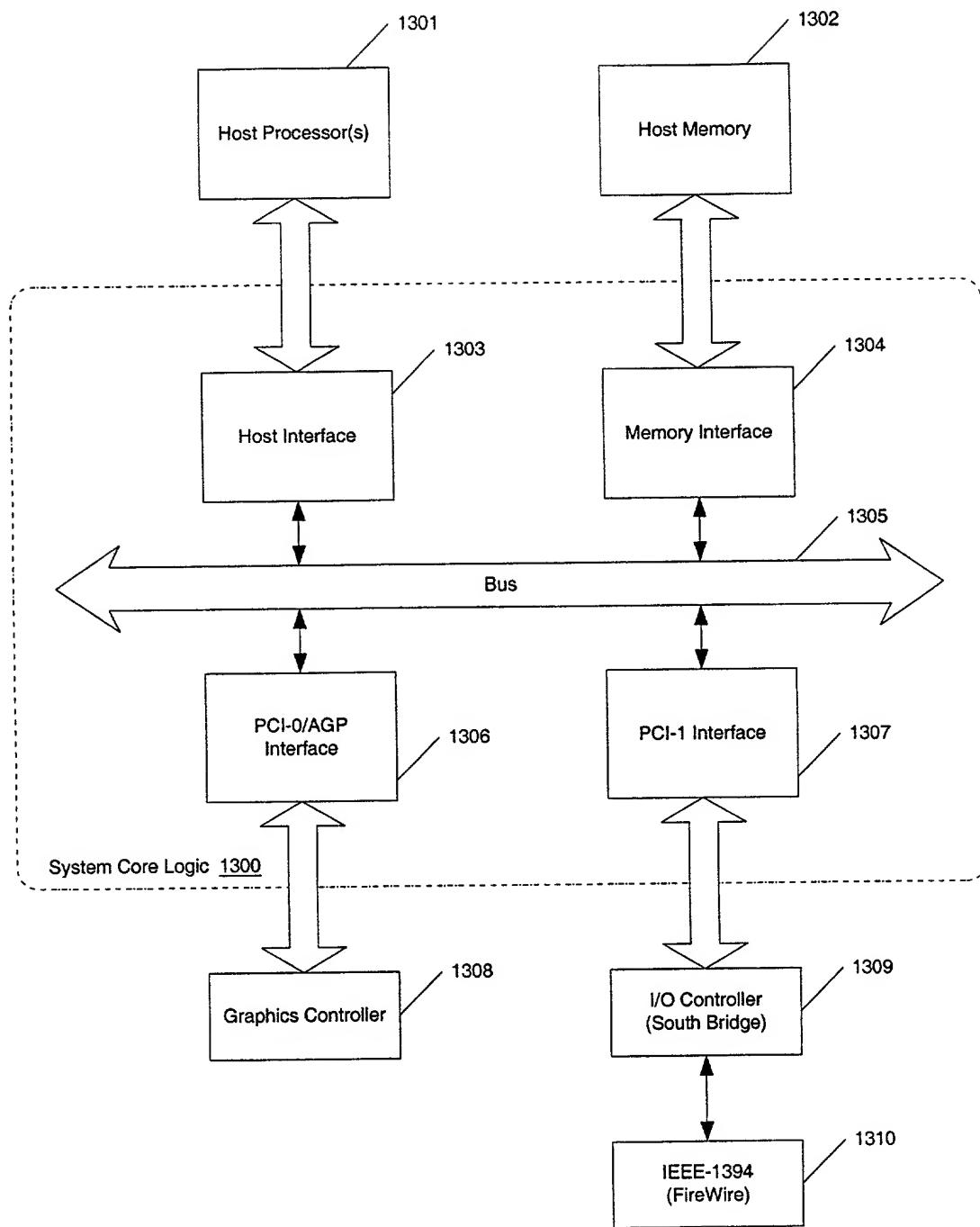


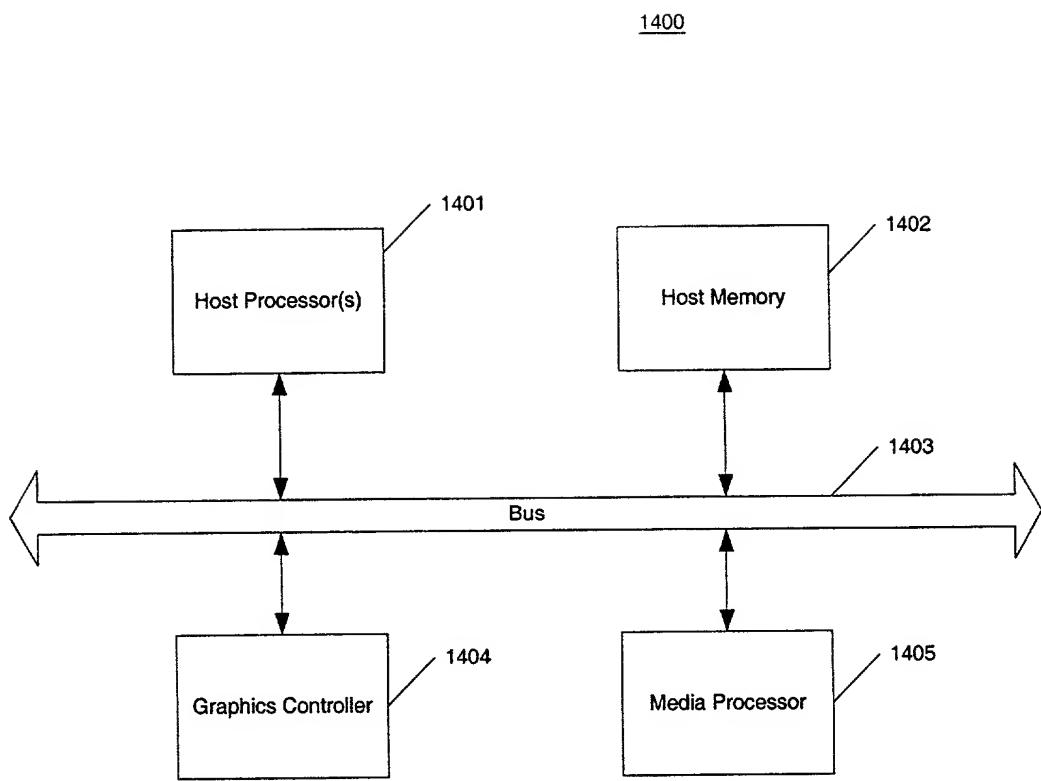
**Figure 1**



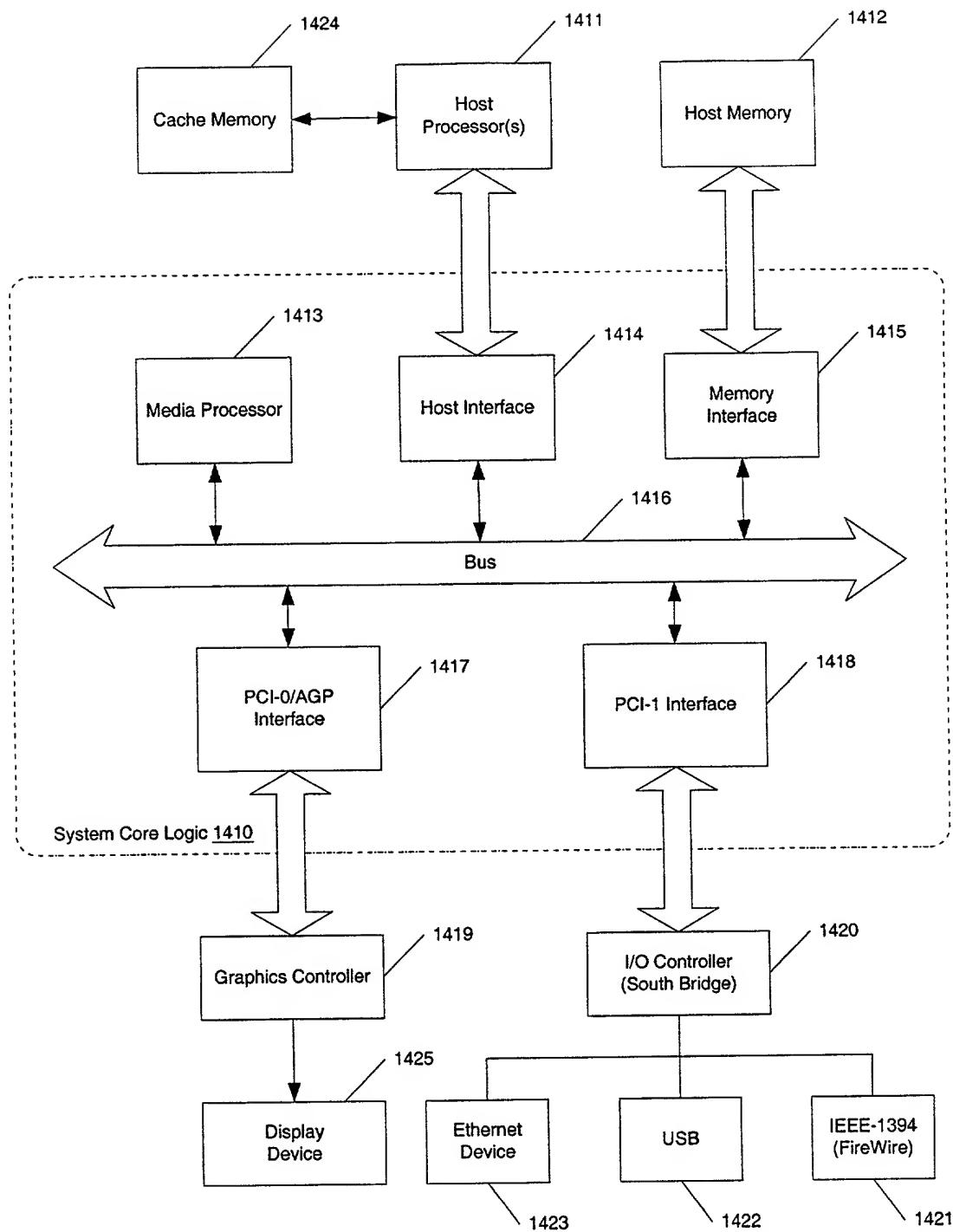
**Figure 2**



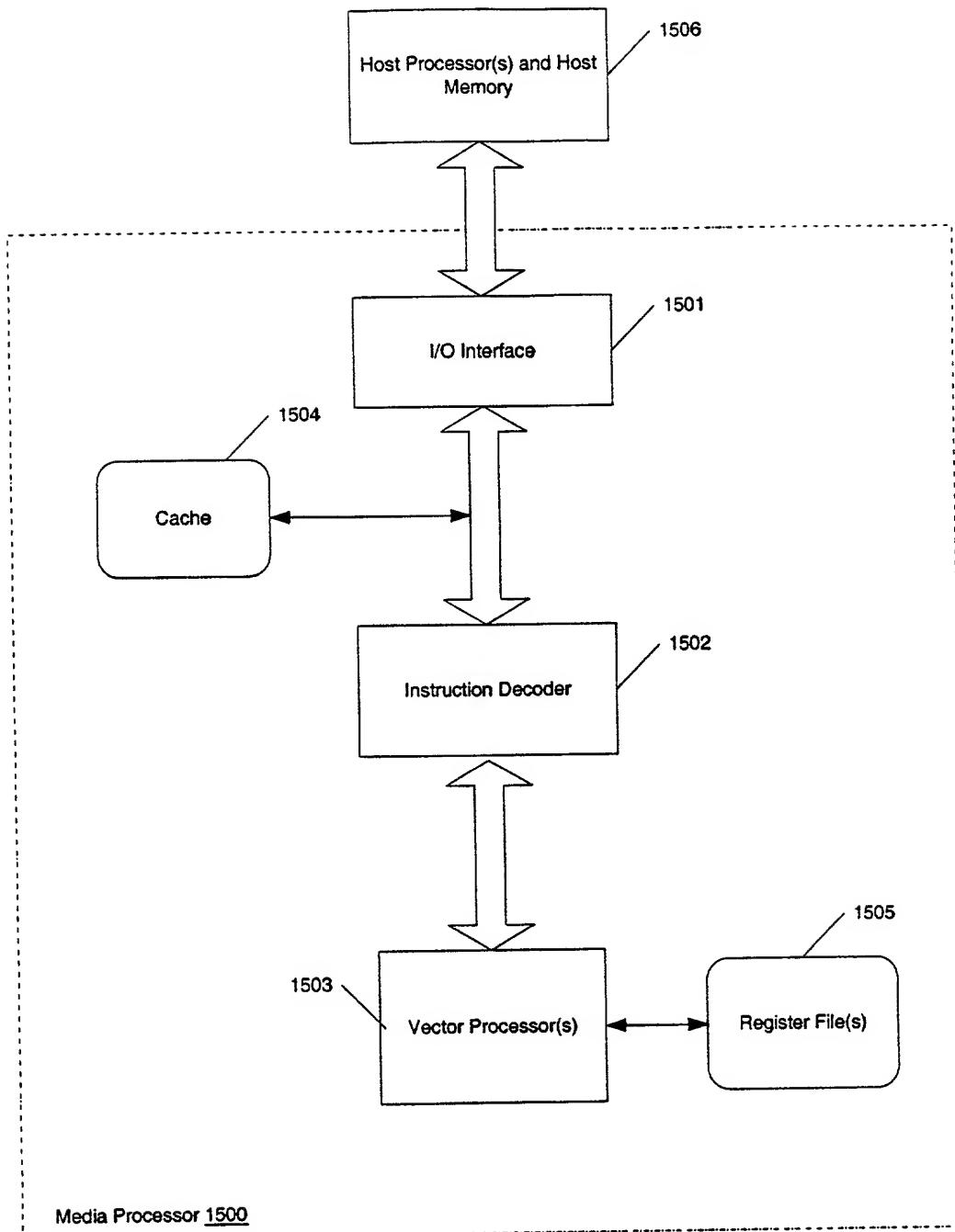
**Figure 3**



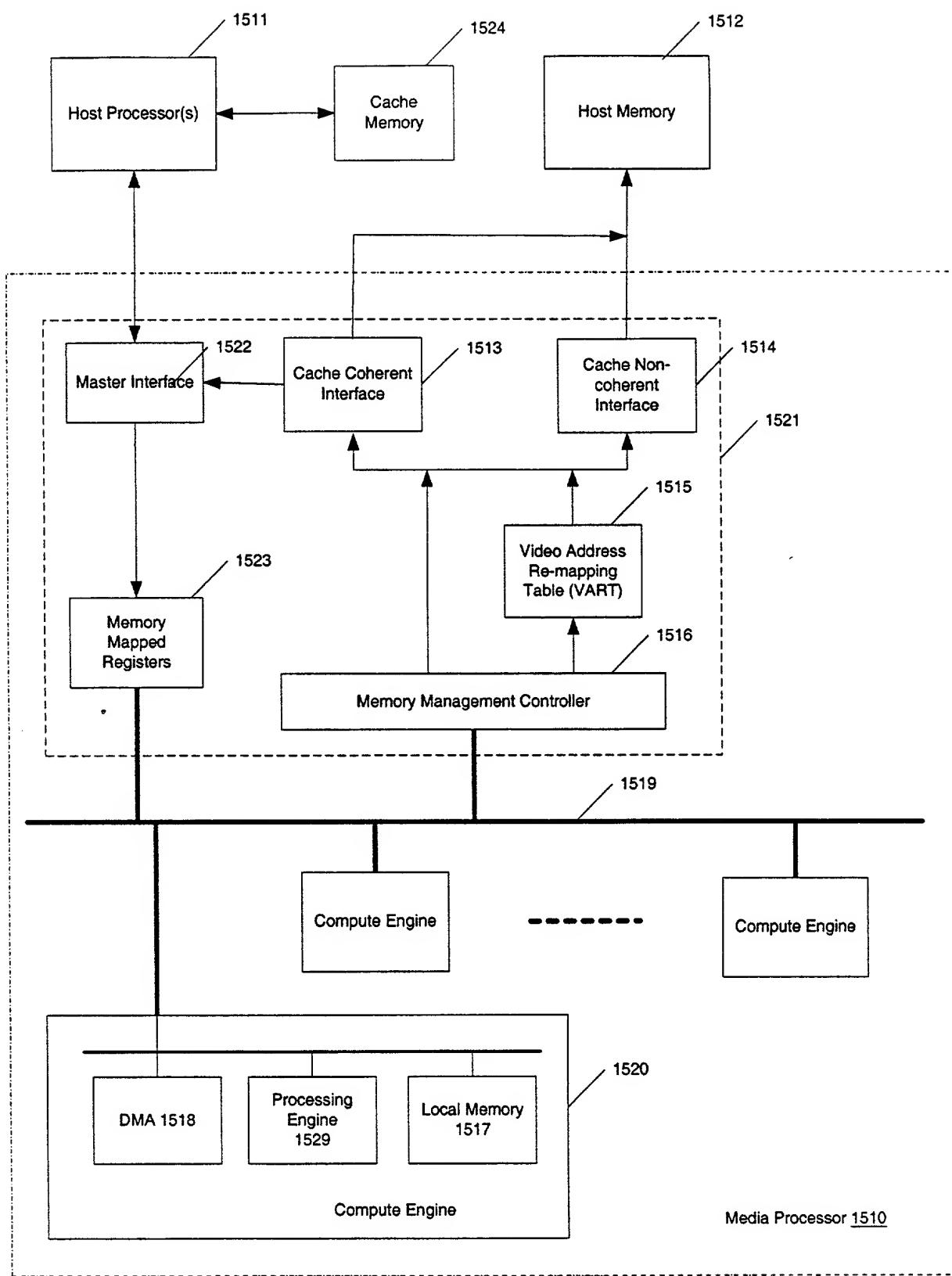
**Figure 4A**



**Figure 4B**



**Figure 5A**



**Figure 5B**

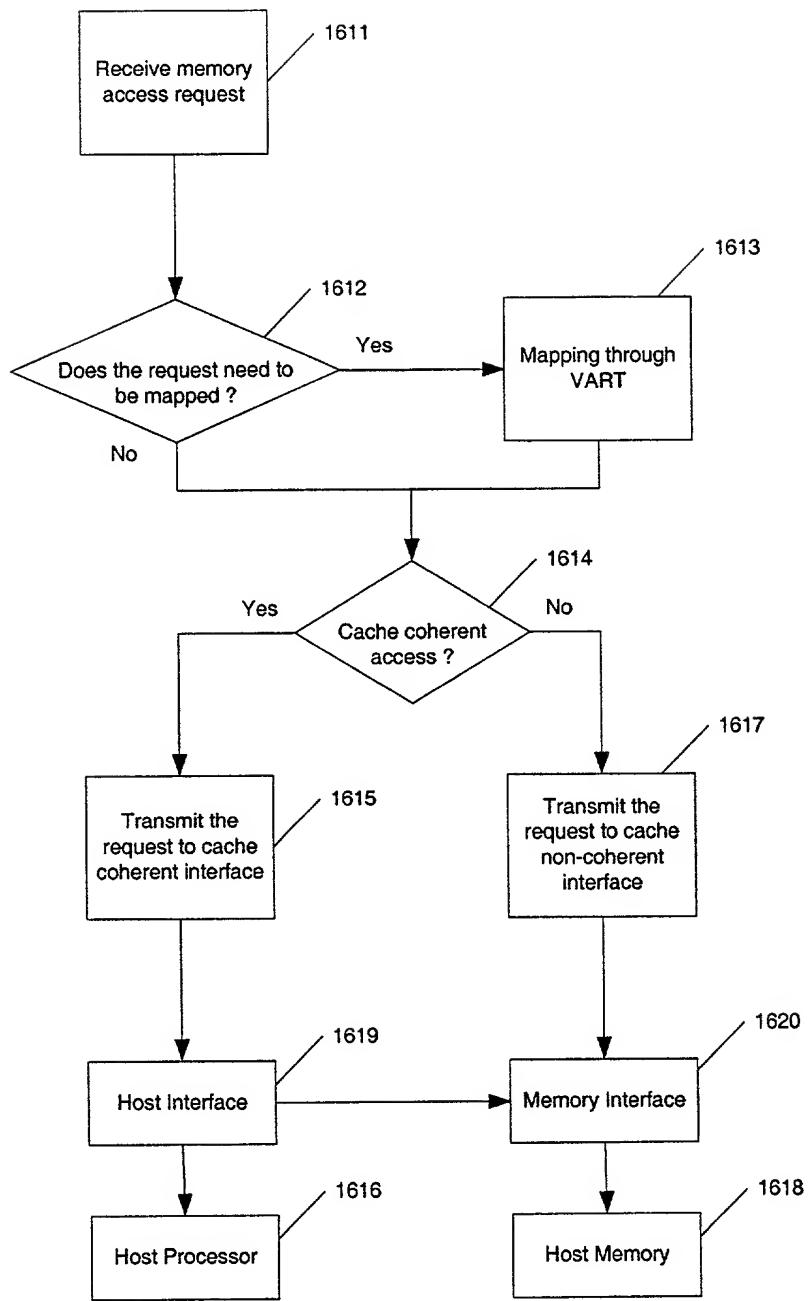
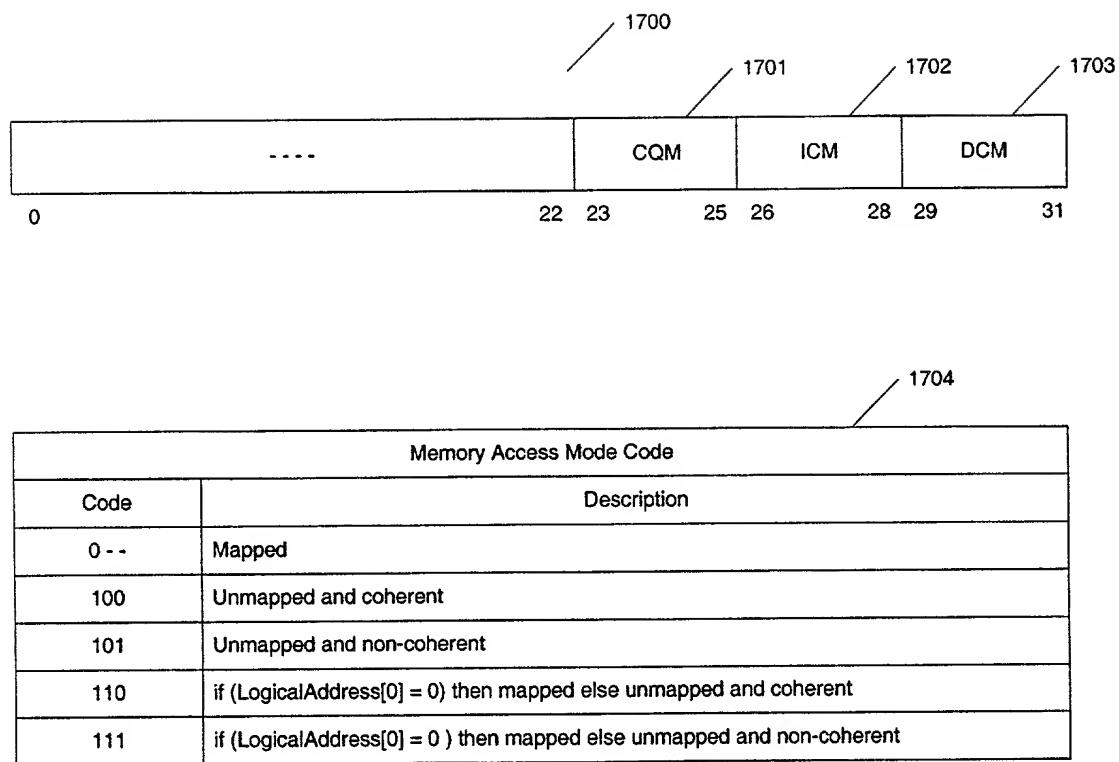
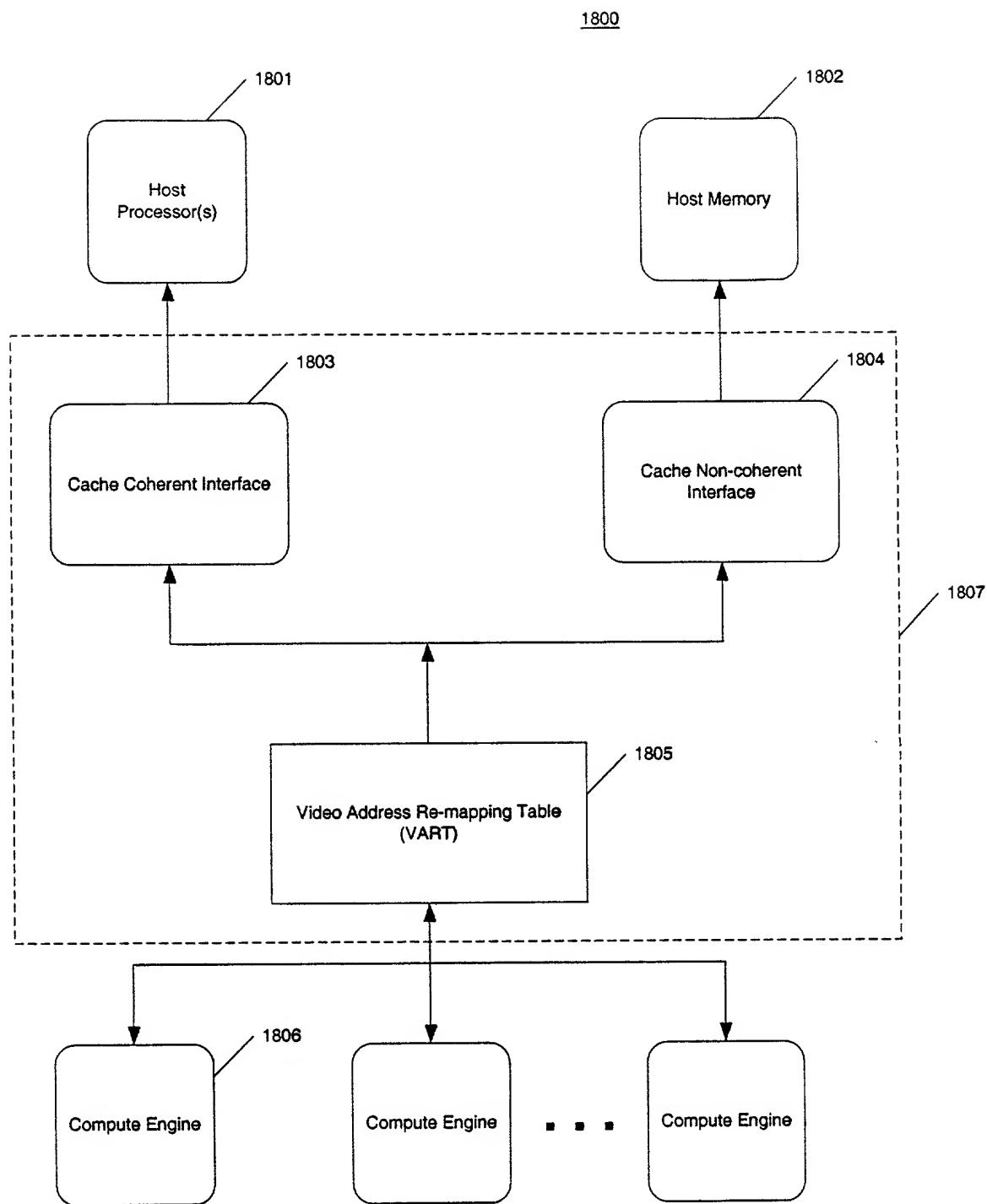


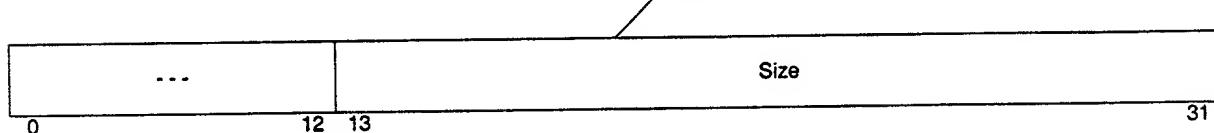
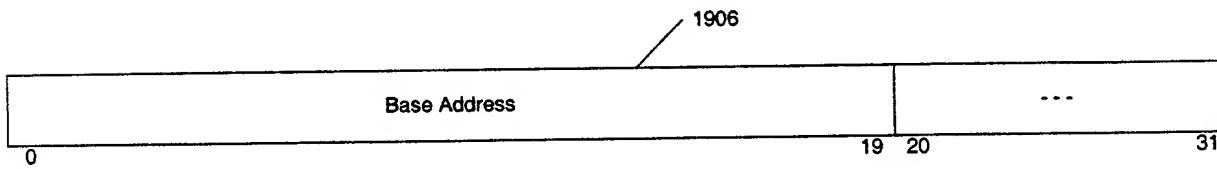
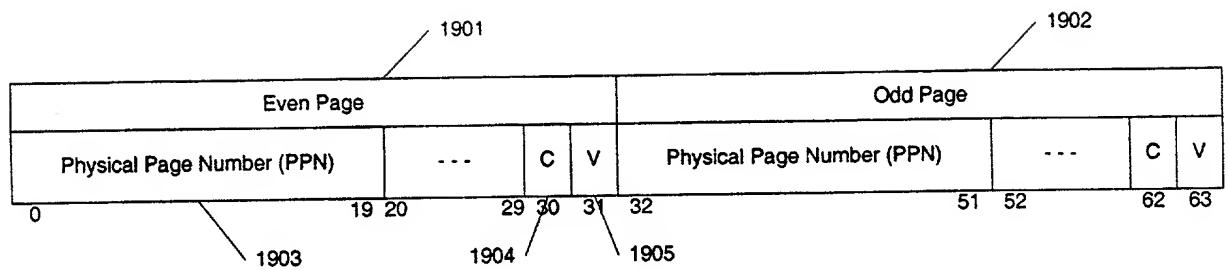
Figure 6



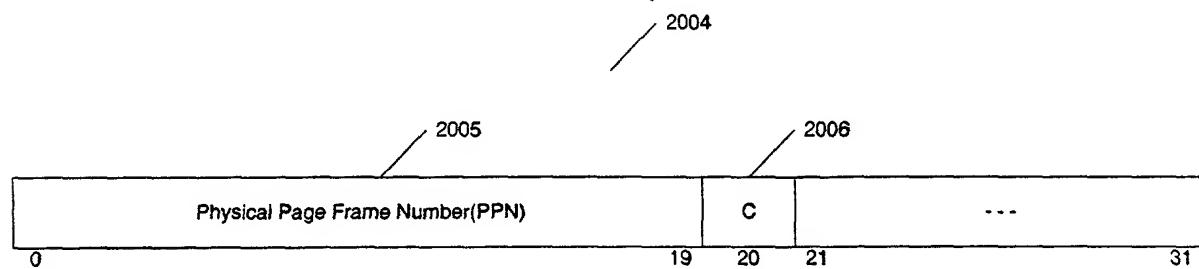
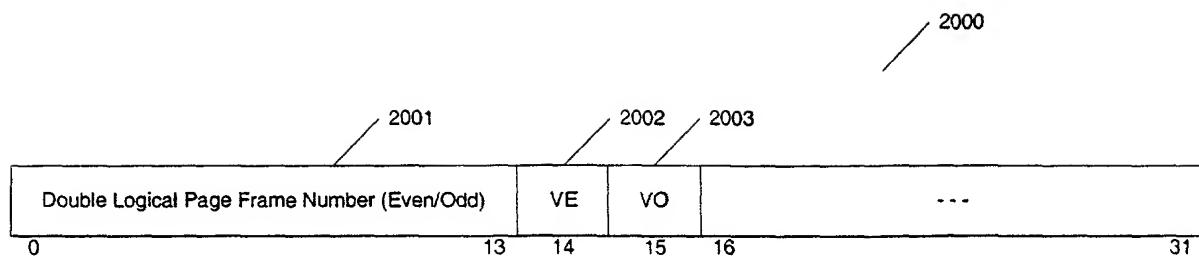
**Figure 7**



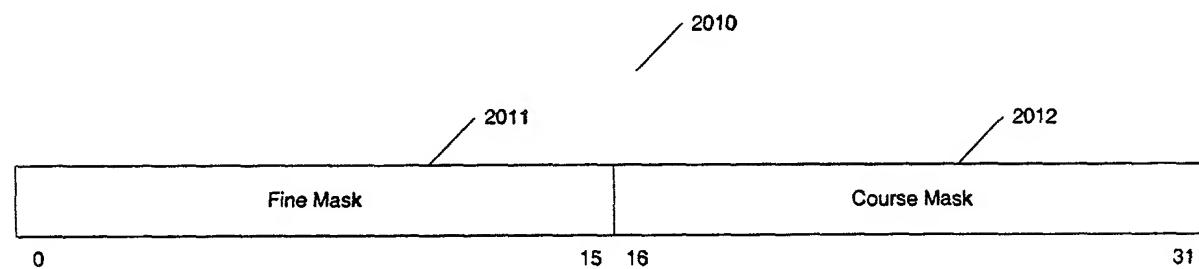
**Figure 8**



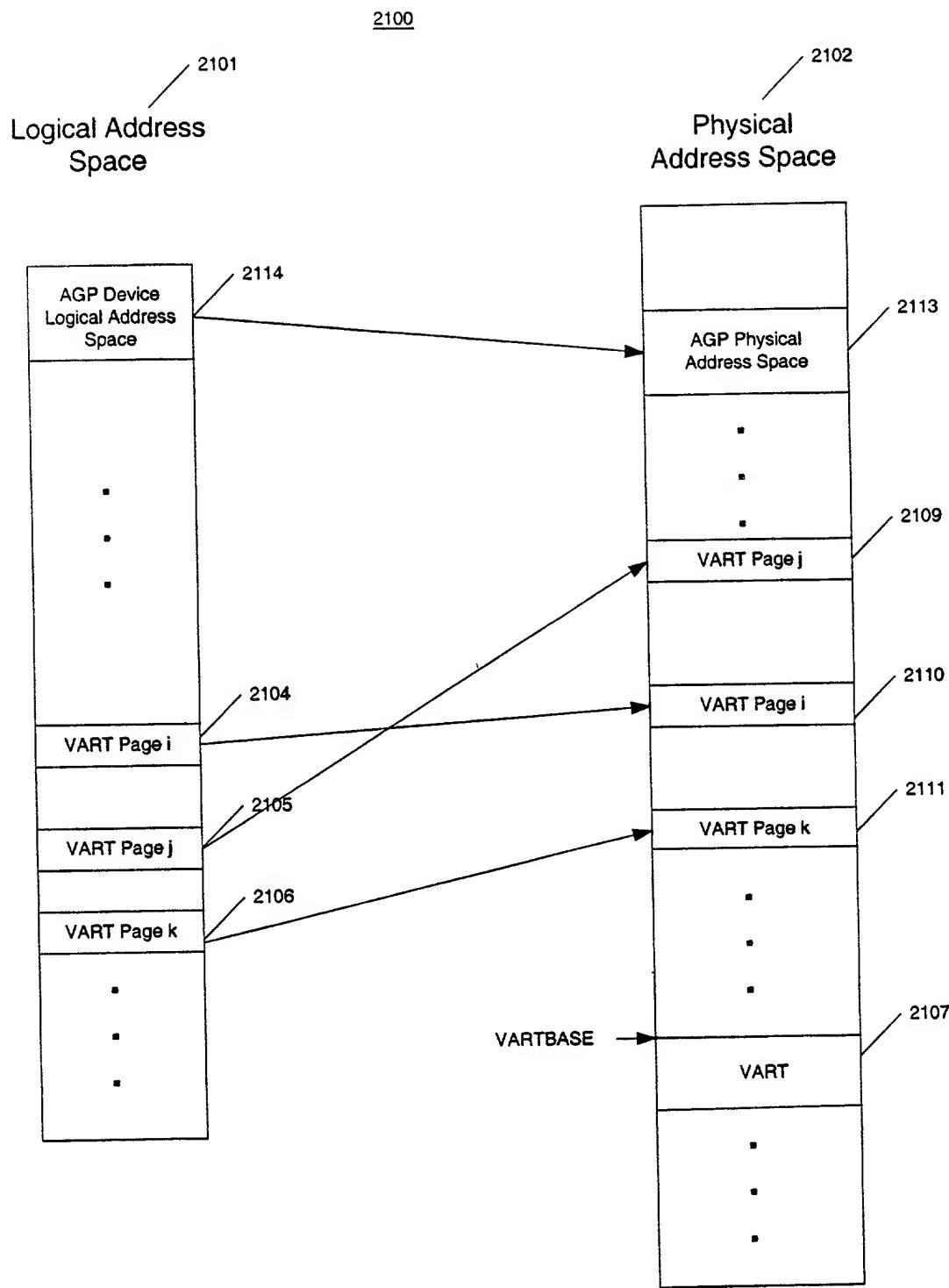
**Figure 9**



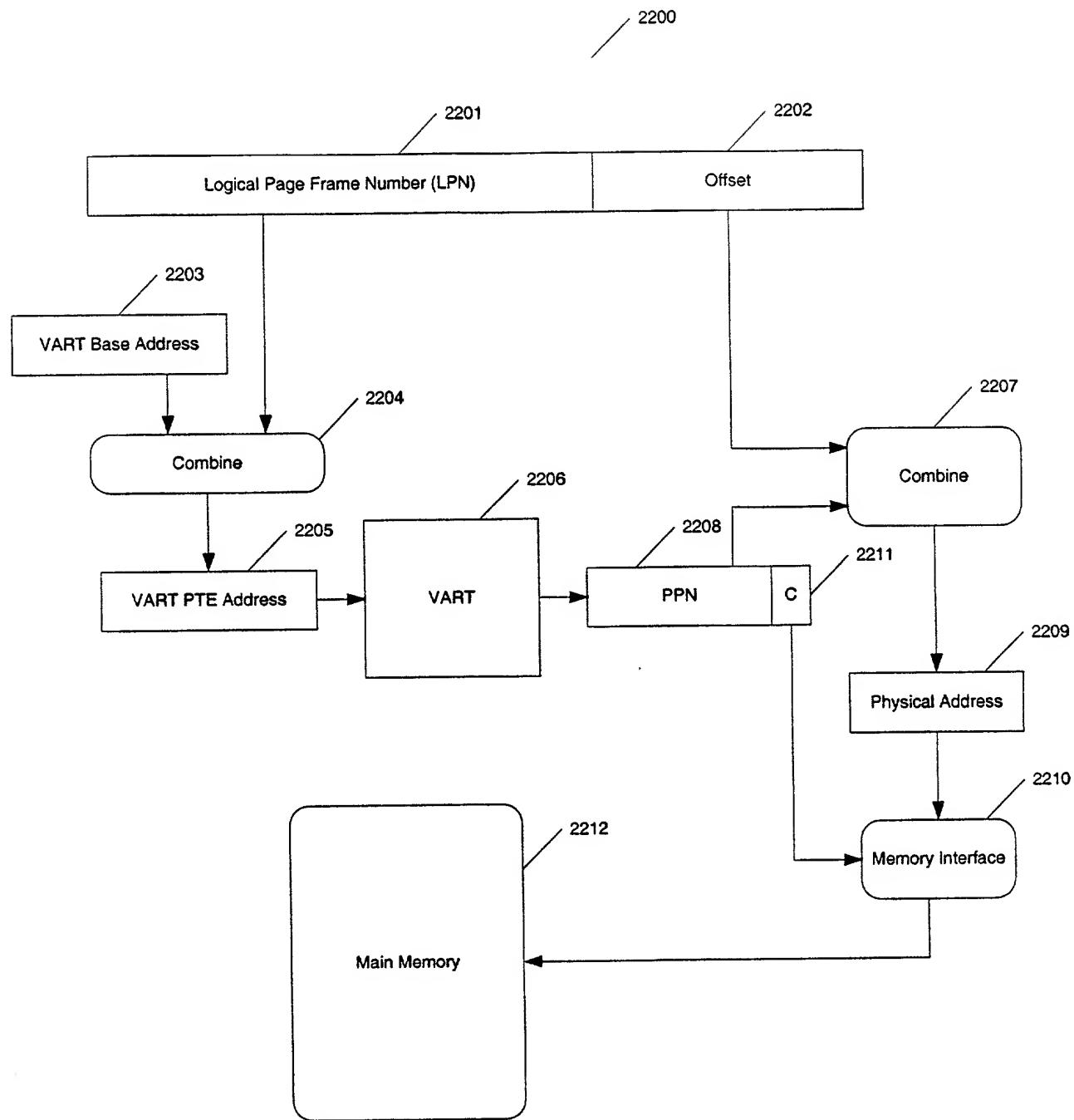
**Figure 10A**



**Figure 10B**



**Figure 11**



**Figure 12**

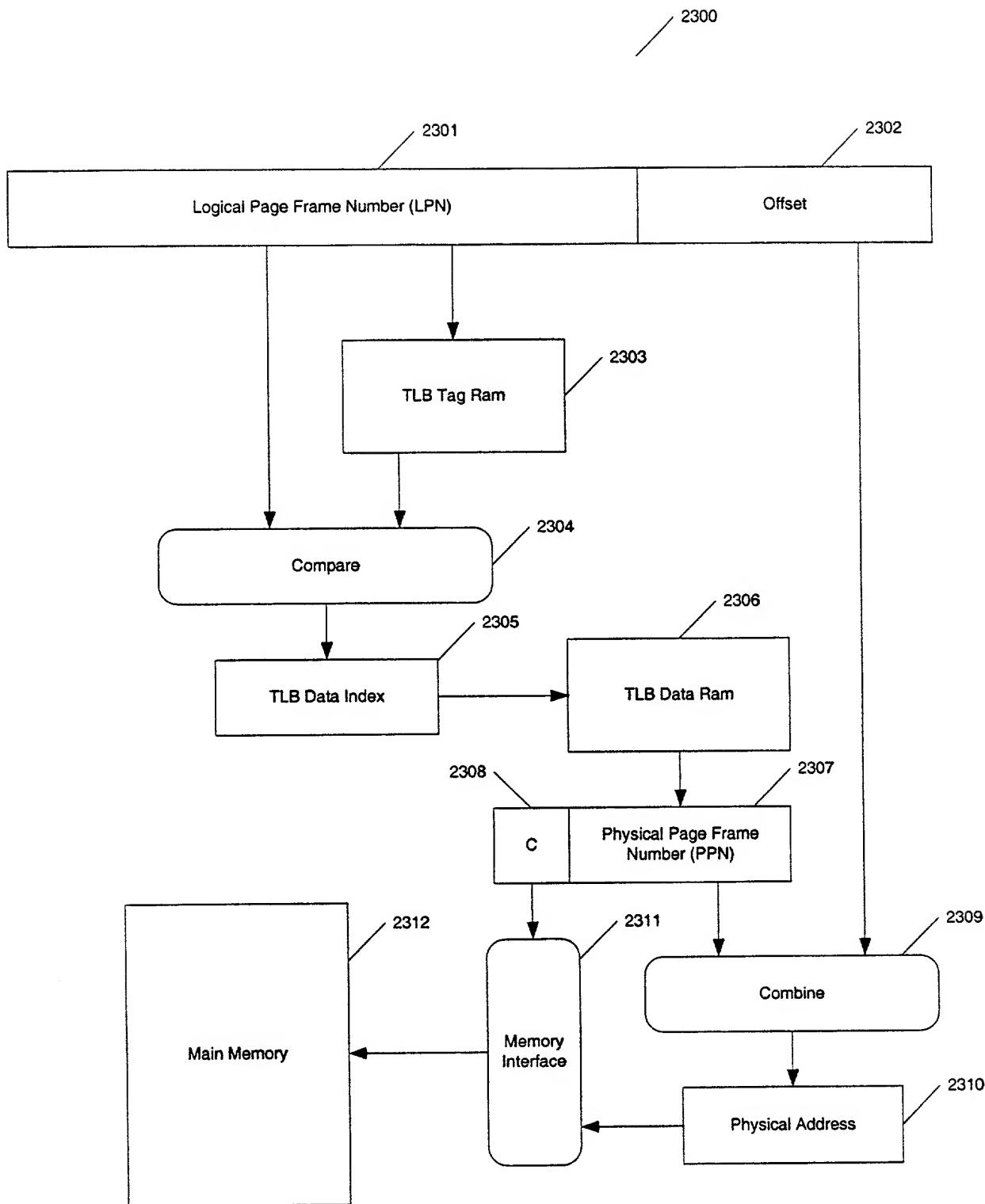


Figure 13

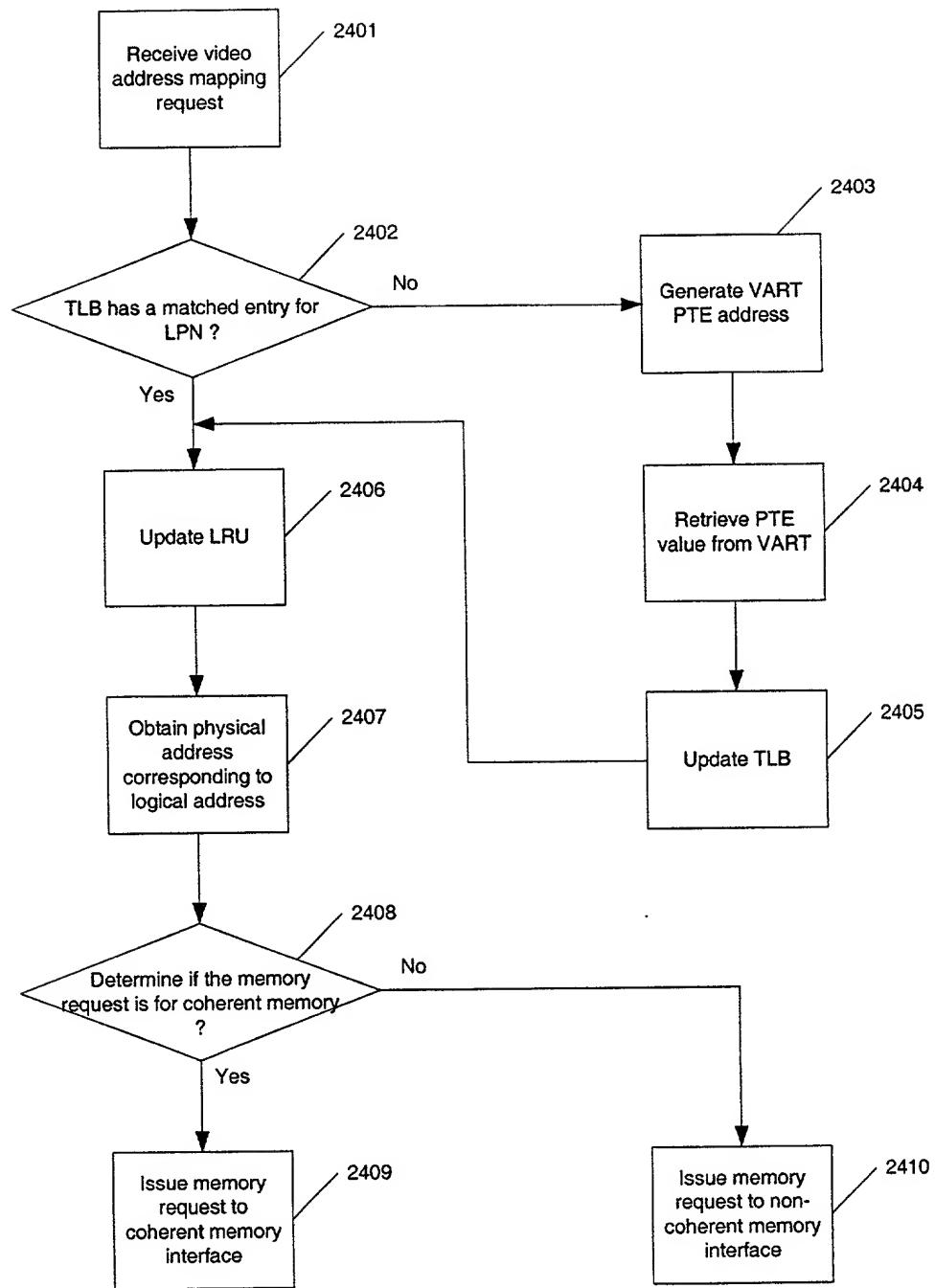
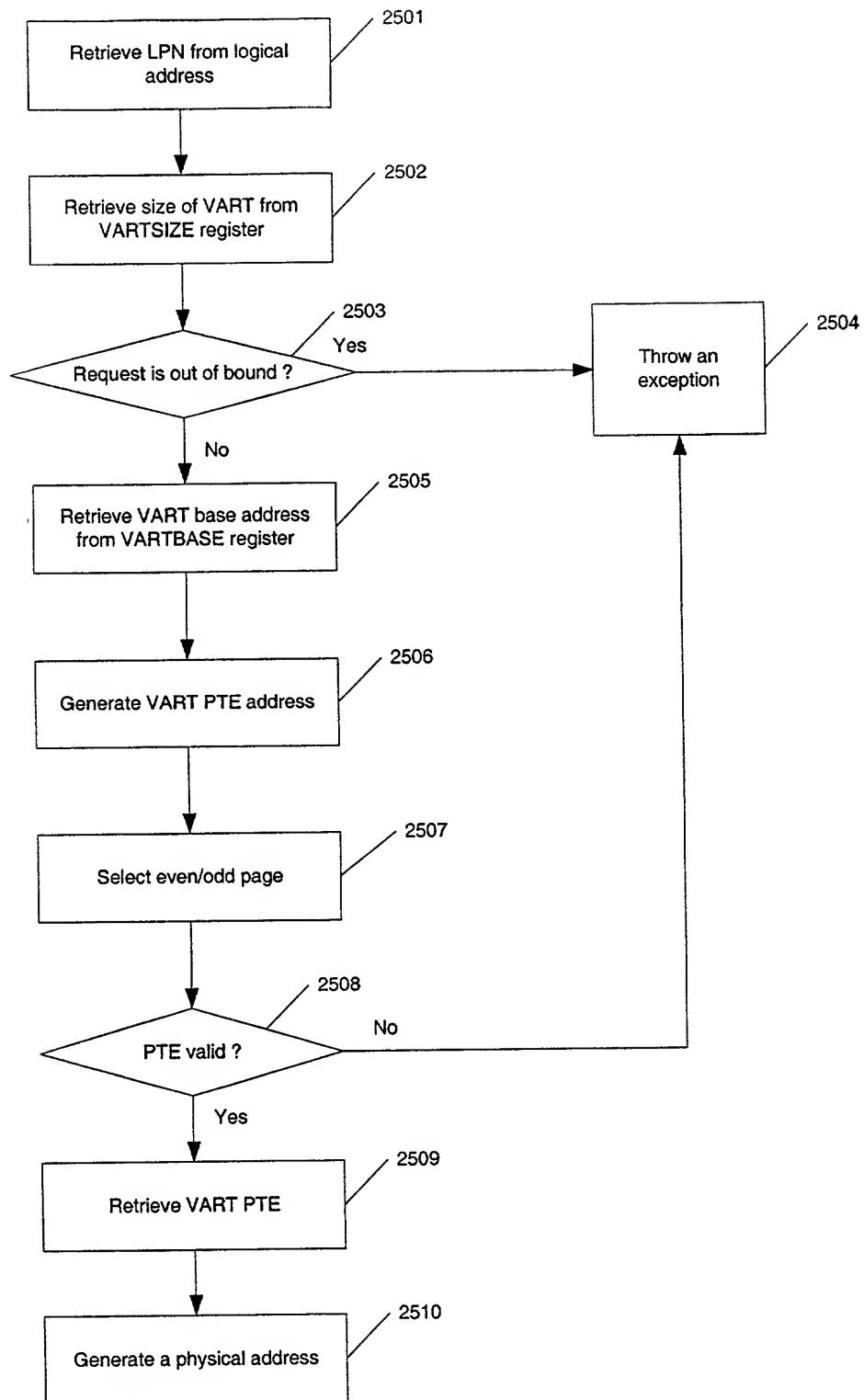


Figure 14



**Figure 15**

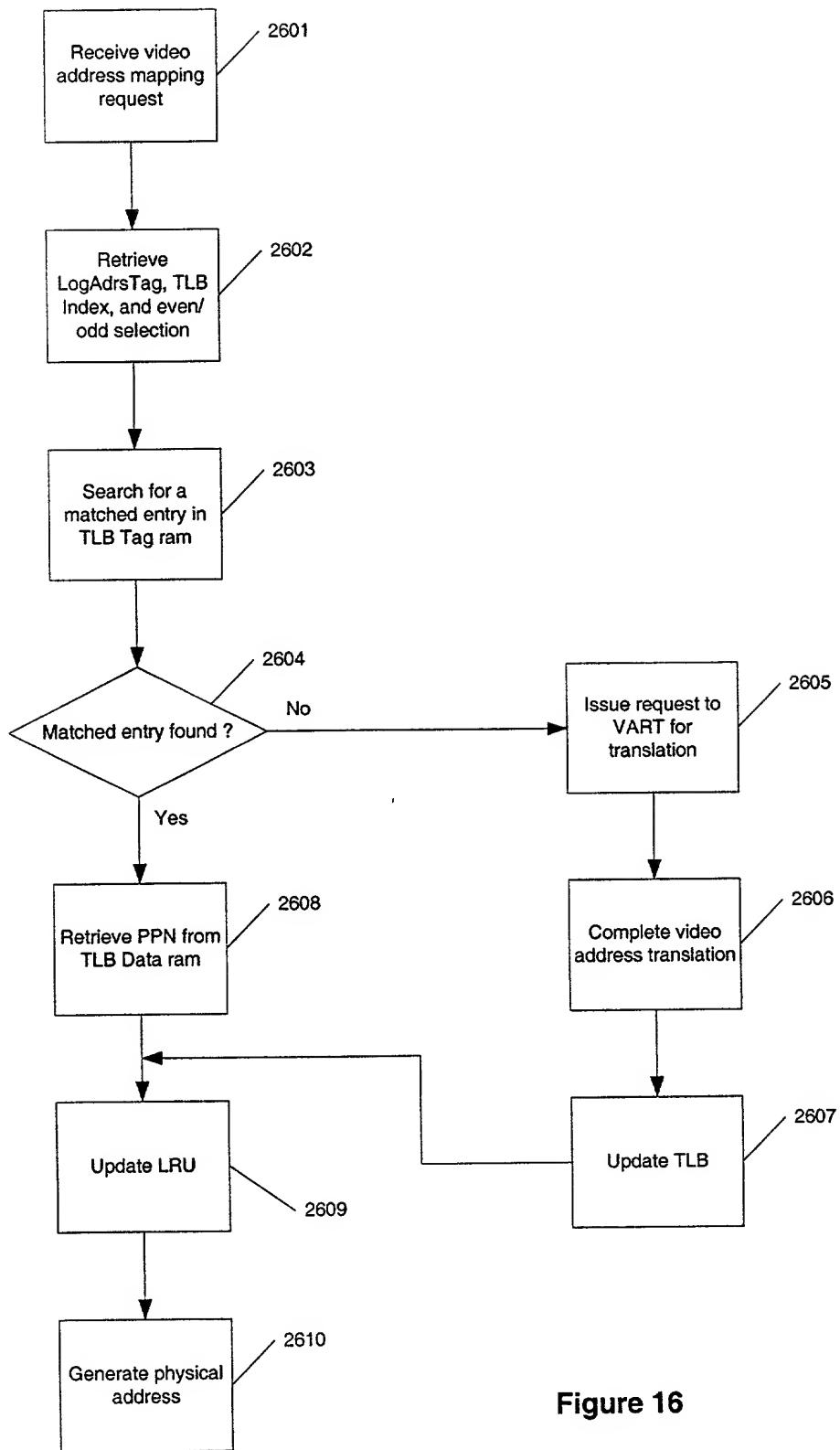
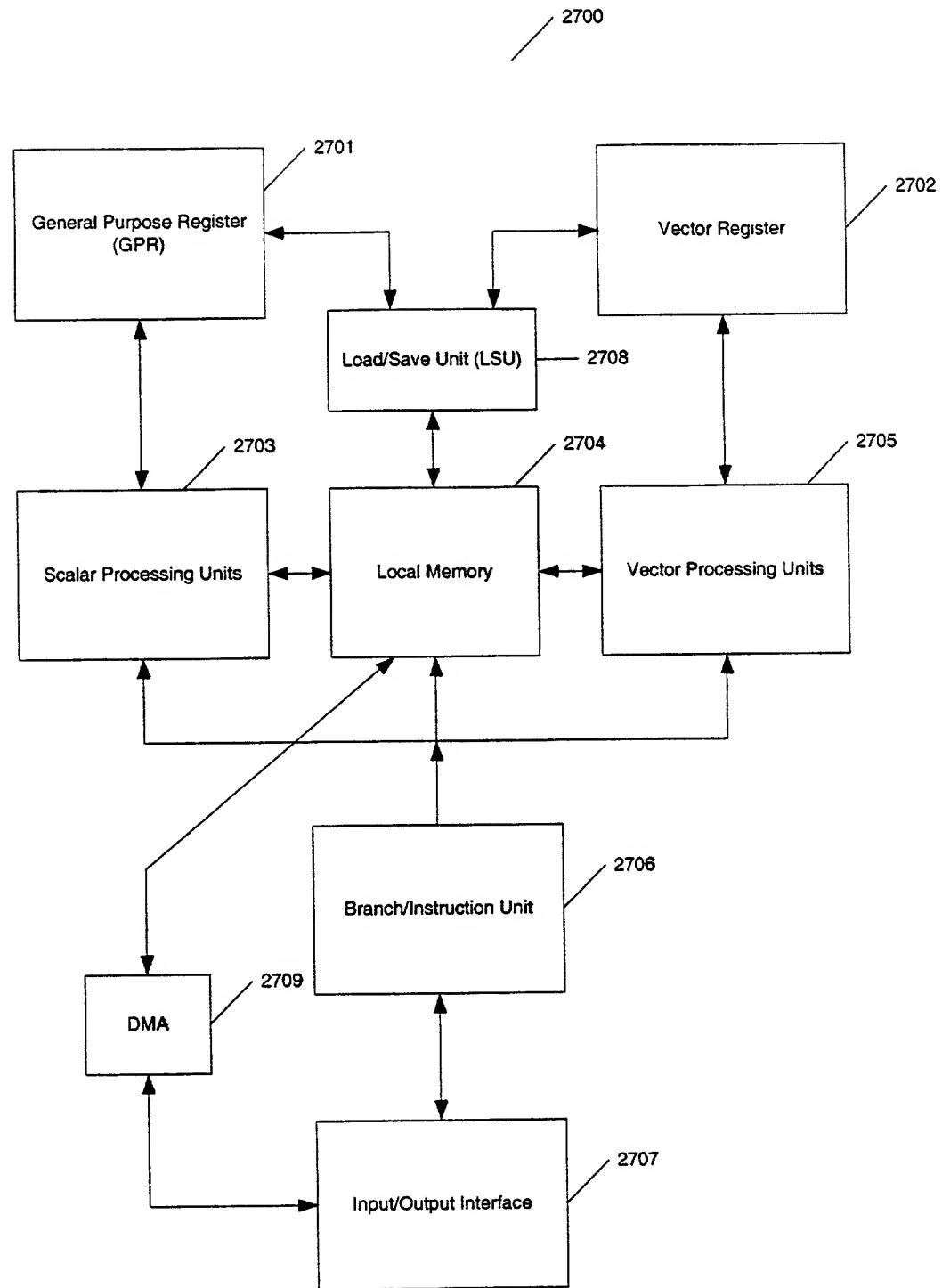
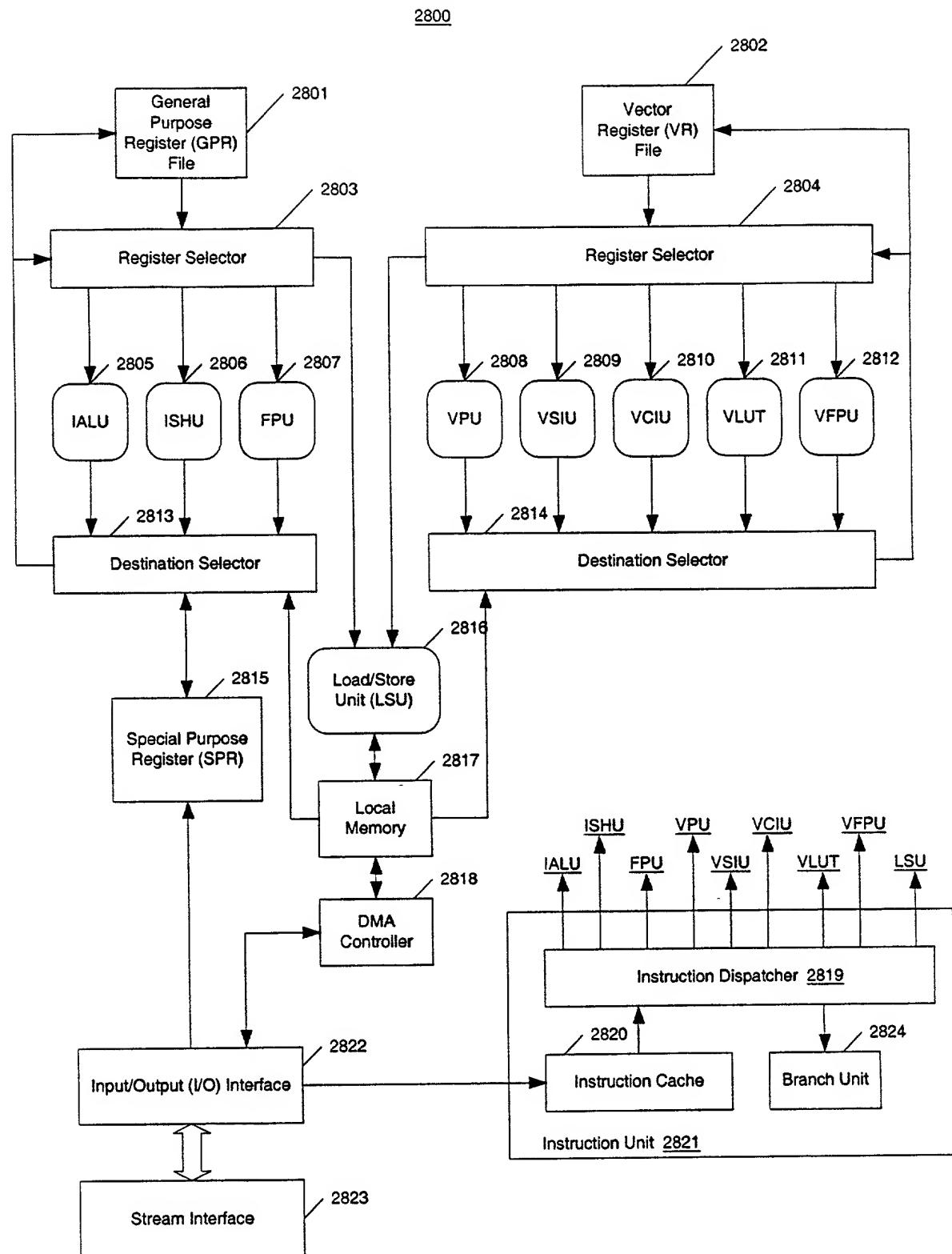


Figure 16



**Figure 17**



**Figure 18**

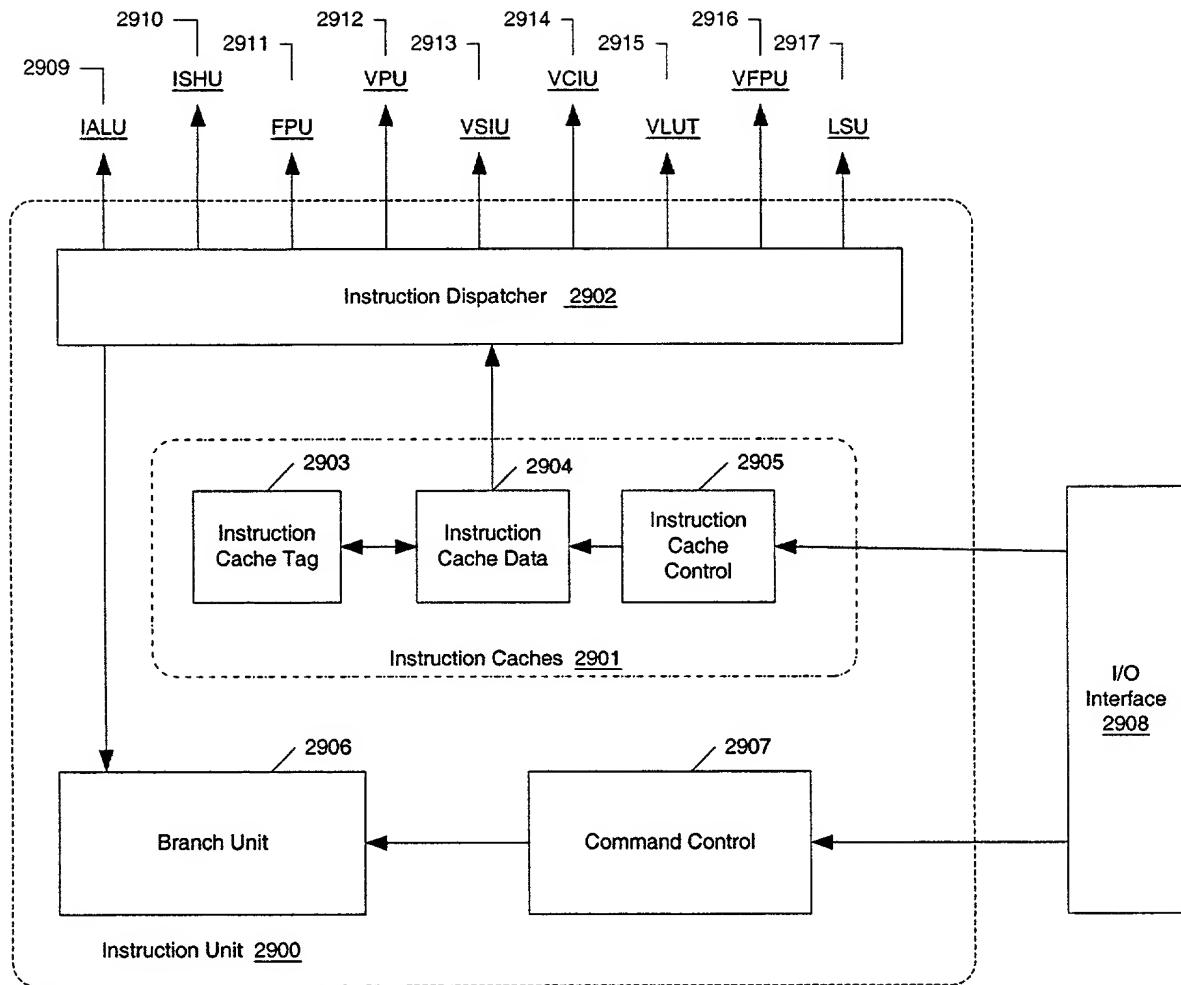


Figure 19A

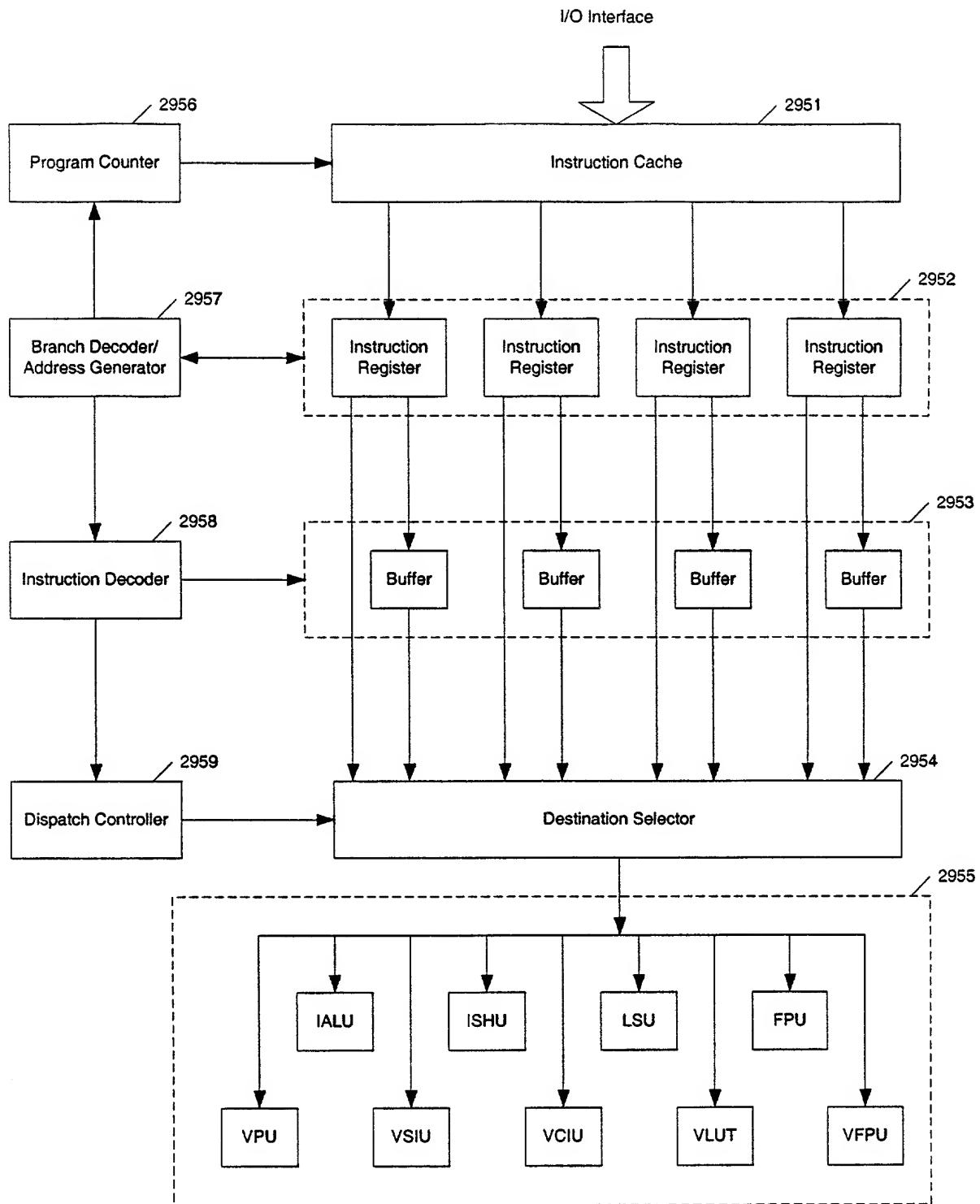
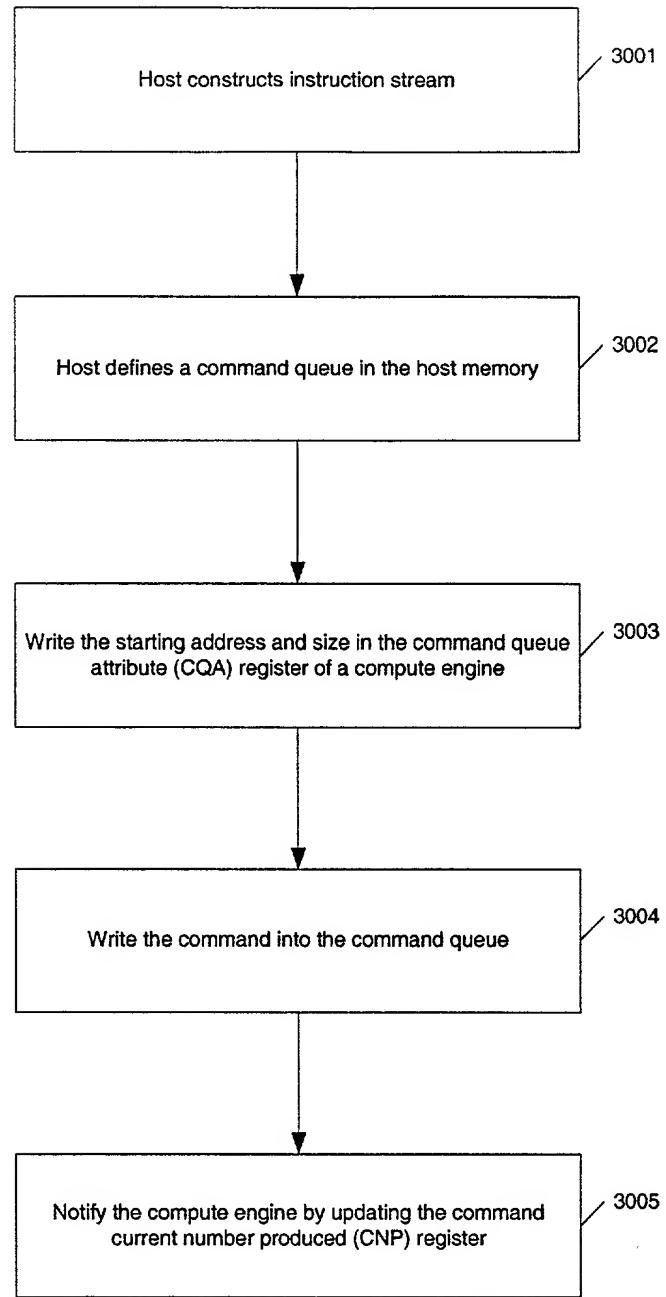


Figure 19B



**Figure 20A**

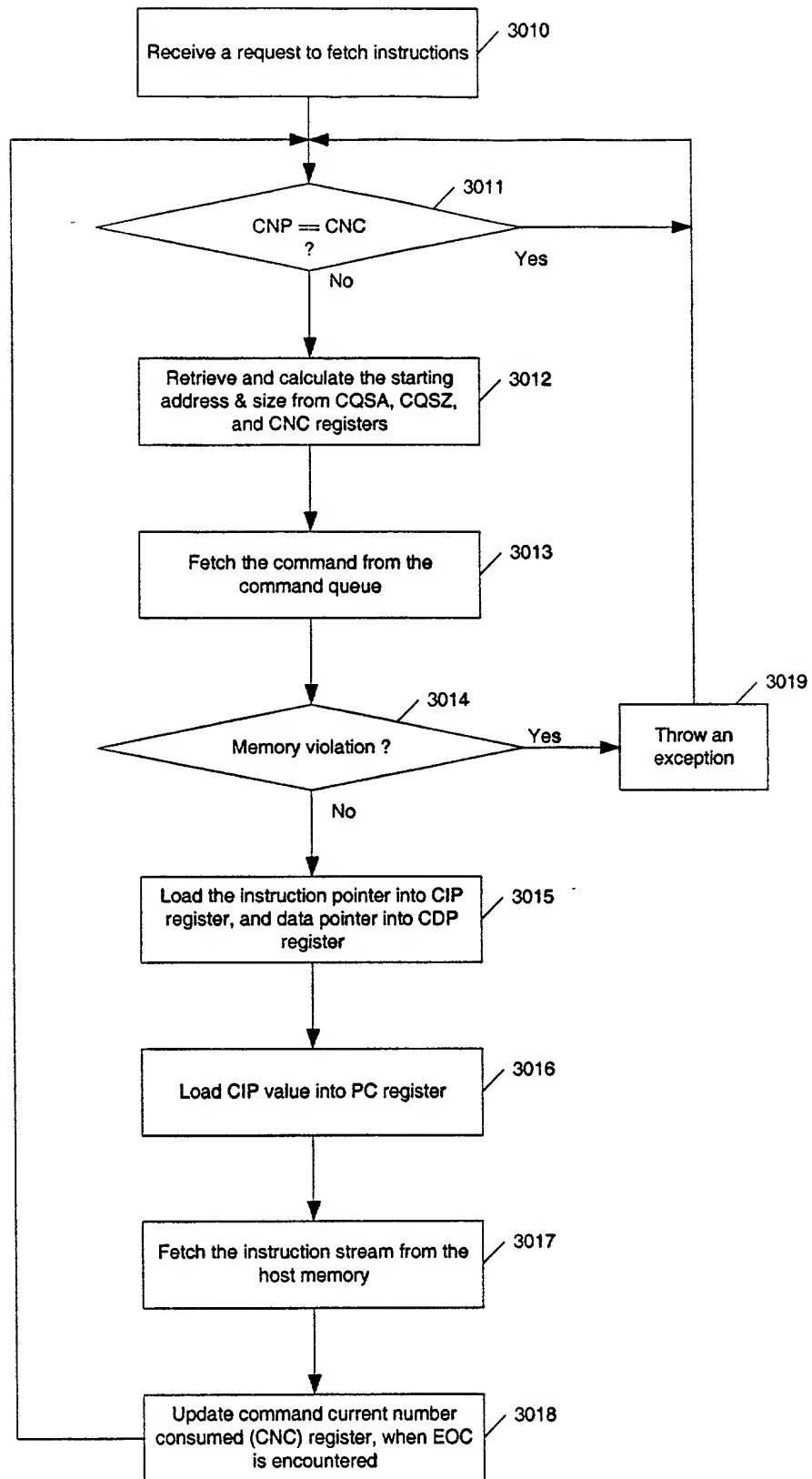
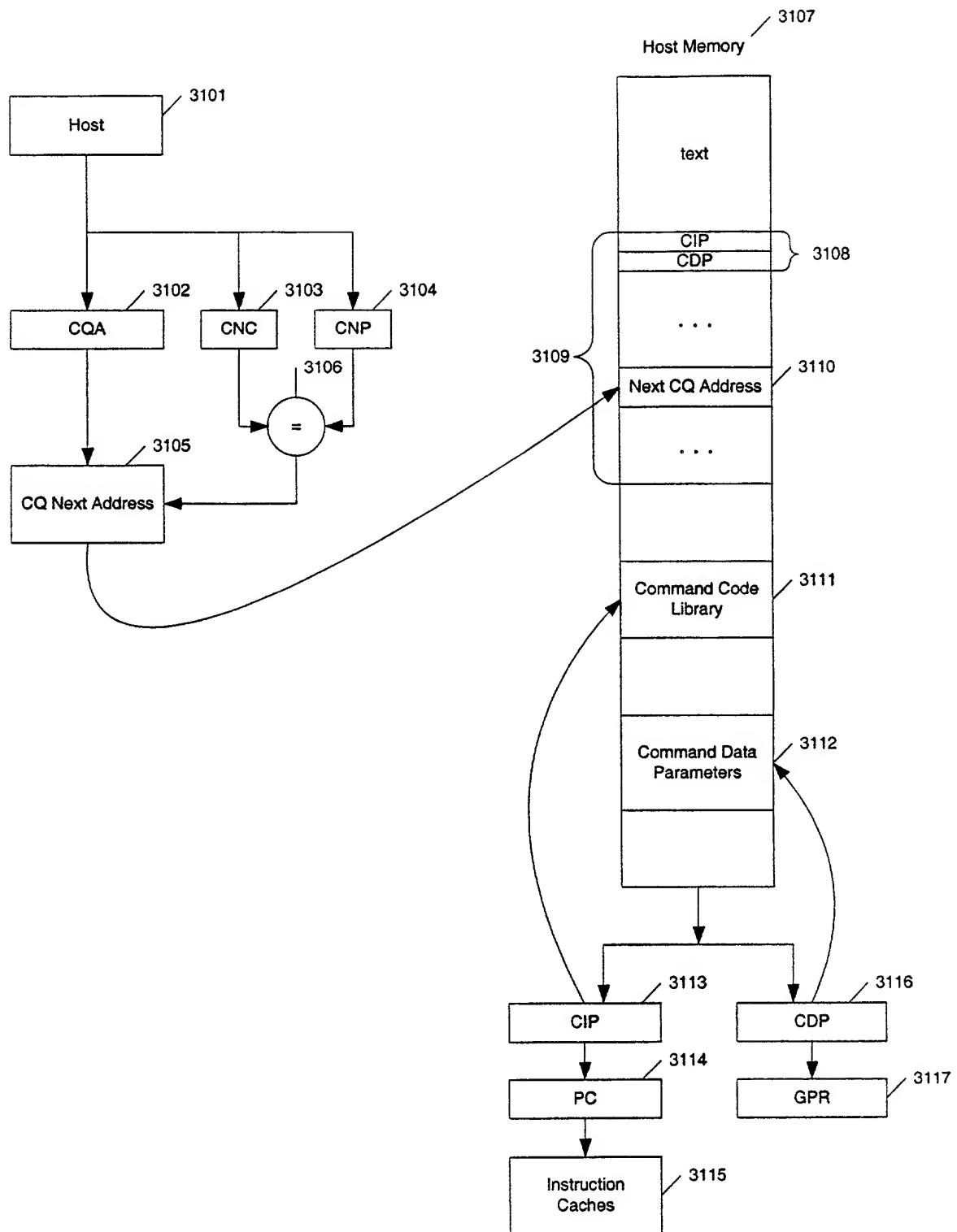


Figure 20B



**Figure 21**

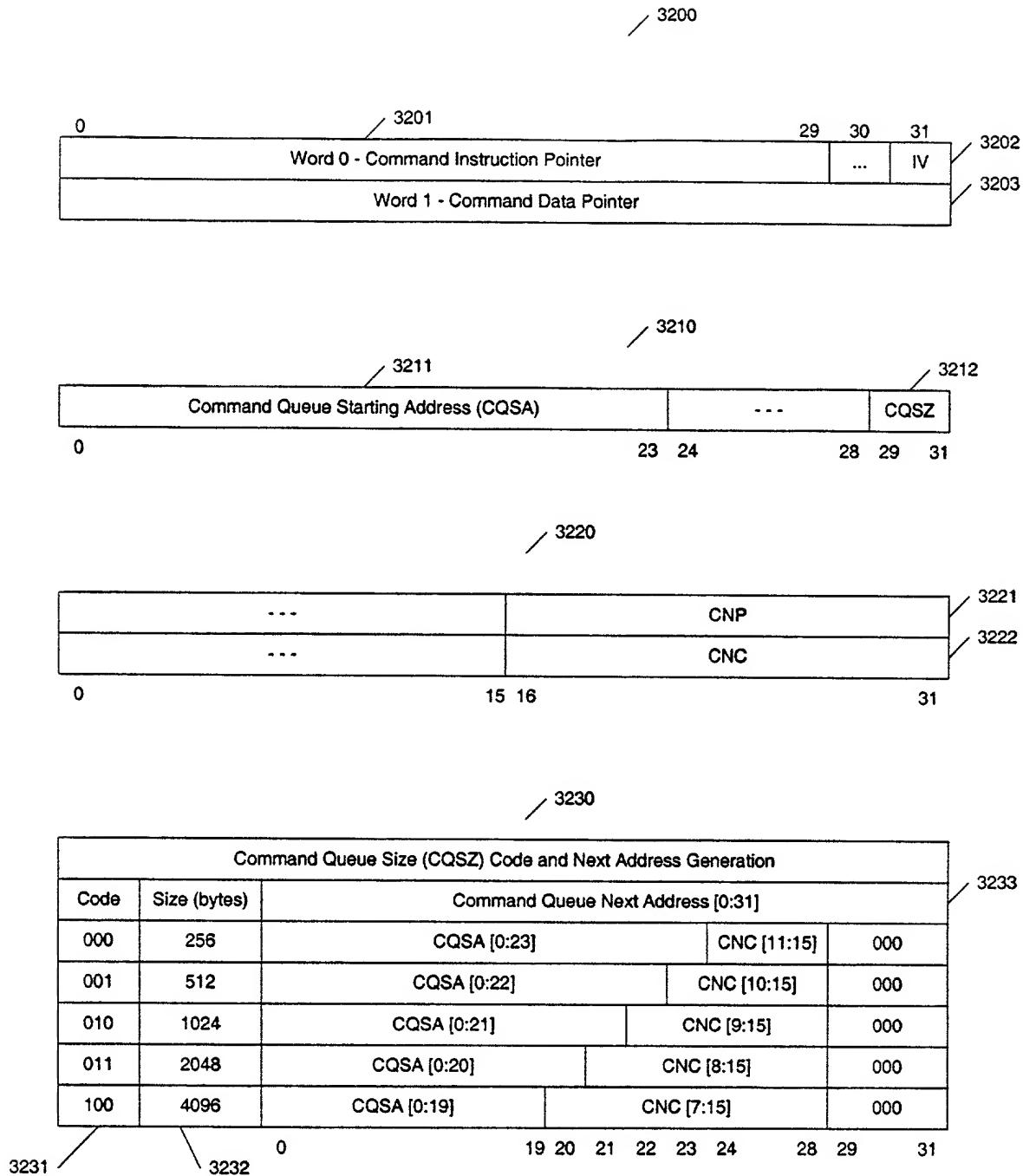


Figure 22

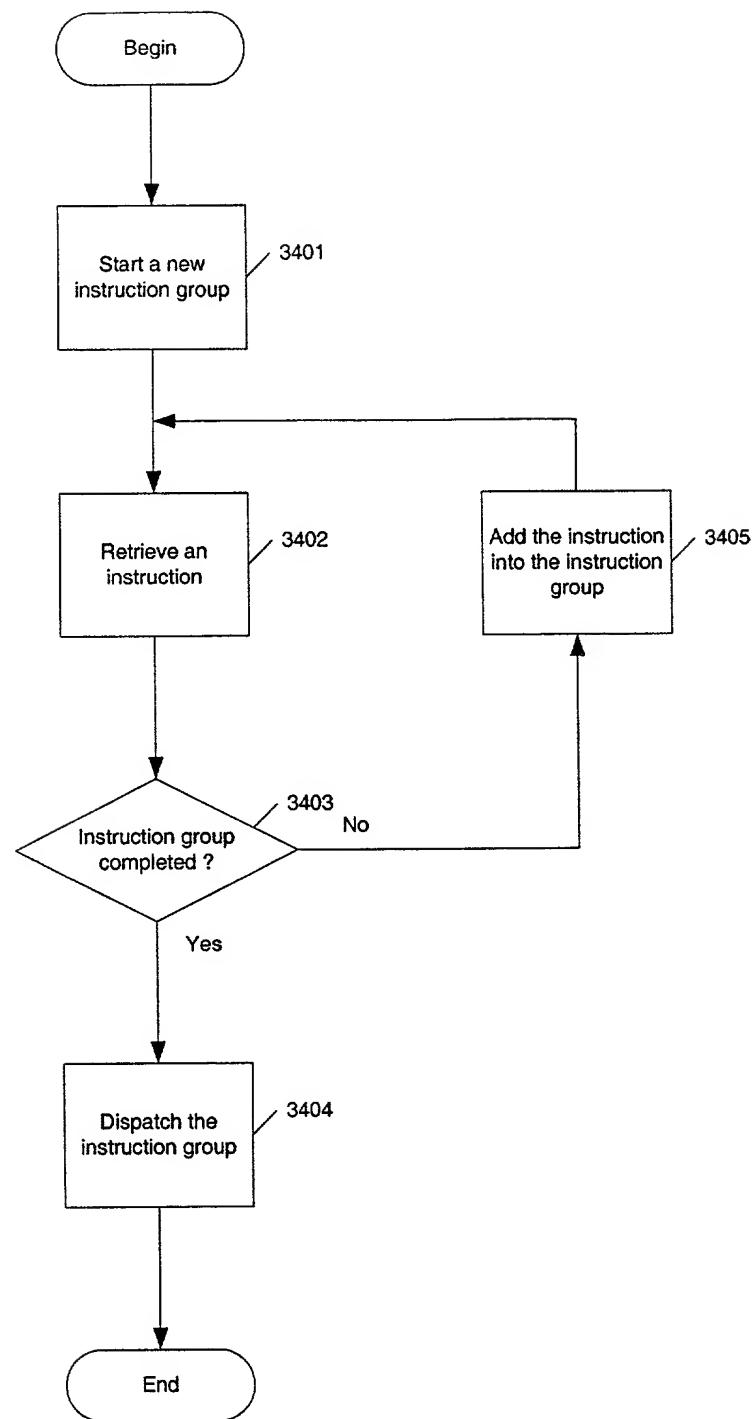
3300

Priority Number	Functional Group Name
0	IALU - Integer Arithmetic/Logical Unit
1	ISHU - Integer Shift Unit
2	LSU - Load/Store Unit
3	VPU - Vector Permute Unit
4	VSIU - Vector Simple Integer Unit
5	VCIU - Vector Complex Integer Unit
6	VLUT - Vector Look-up Table Unit
7	BRU - Branch Unit

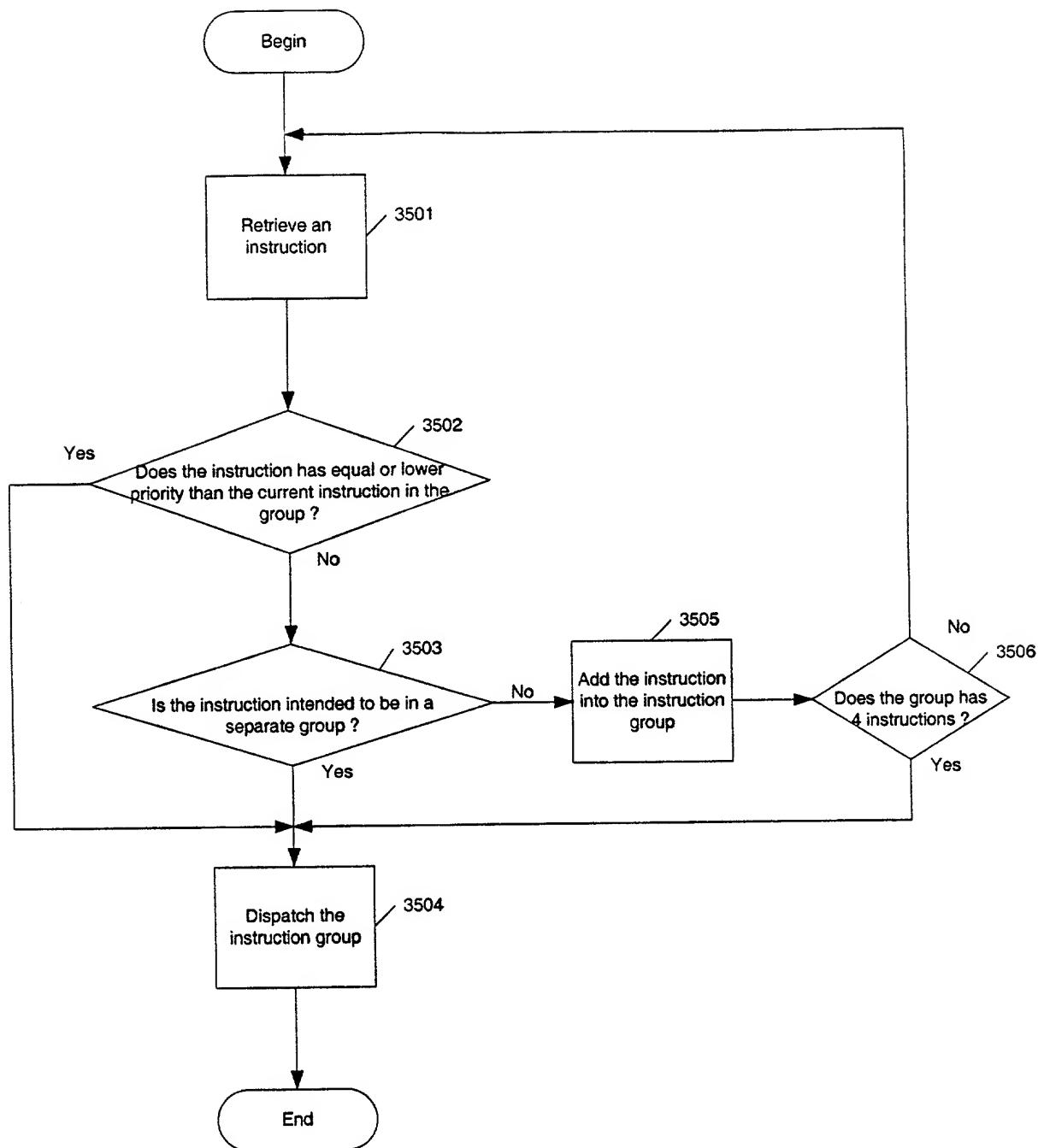
3301

3302

**Figure 23**



**Figure 24**



**Figure 25**

Functional Unit	Latency	Dispatch Rate
IALU - not multiply or divide	2	1
IALU - multiply	19	19
IALU - divide	35	35
ISHU	2	1
LSU - non-DMA address update	2	1
LSU - non-DMA load data update	3	1
LSU - non-DMA store	1	1
LSU - DMA instructions	1	1
VPU	2	1
VSIU	2	1
VCIU	6	1
VLUT - reads, vvid	4	1
VLUT - writes	1	1
Branch instruction	1	1

Figure 26

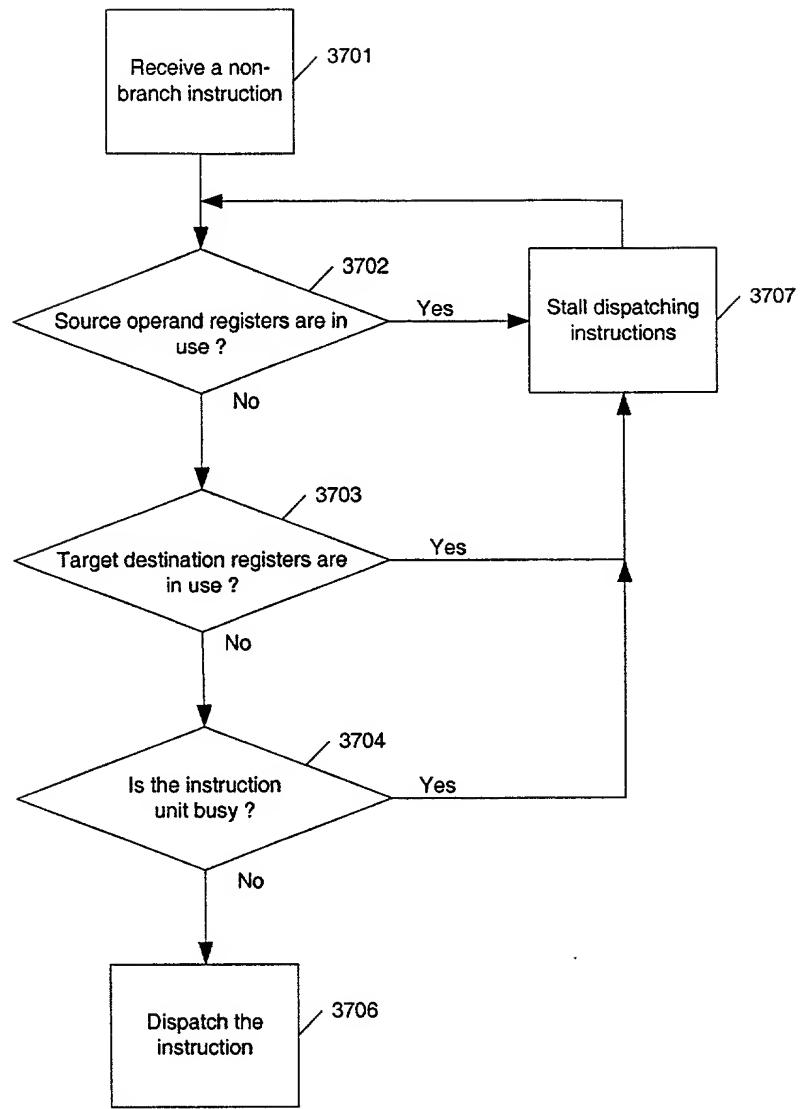
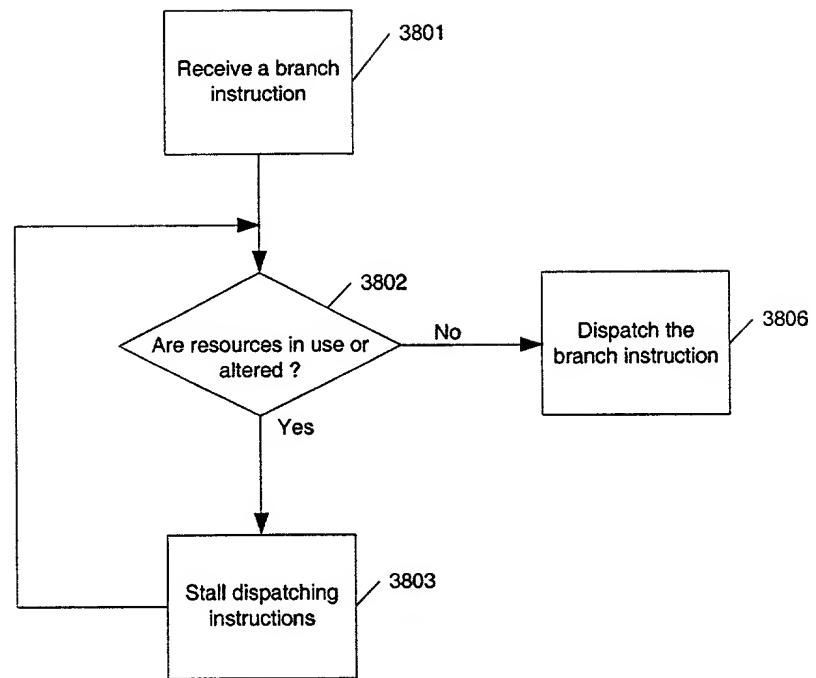


Figure 27



**Figure 28**

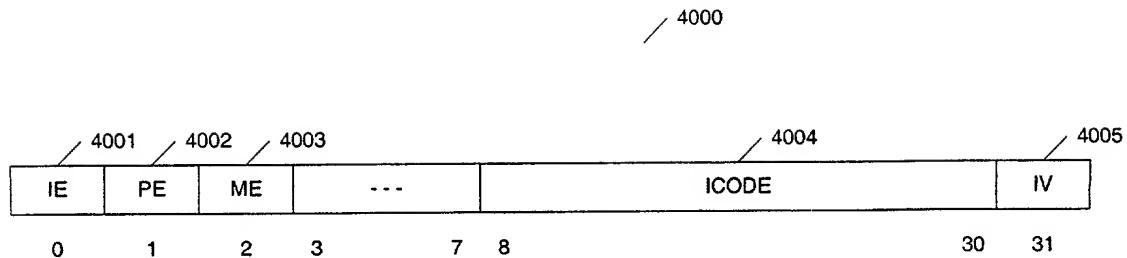
3900

Program Counter		PSt
0		29 30 31

3901

Pst	Name	Description
00	Idle	CQ counters are equal and no current command executing. Program counter is invalid.
01	Run	Command was executing. Program counter points to next instruction that would have been executed.
10	IWait	Command was executing, but instruction fetching has stopped due to a previous exception. Program counter points to the next instruction that would have been executed.
11	CWait	Command was not executing due to an exception in fetching the command. Program counter is invalid.

Figure 29



Name	Descriptions
IE	Illegal Opcode Exception. Occurs whenever an illegal Opcode is fetched for execution. Cleared when read by the host.
PE	Program Counter Exception. Occurs whenever the host does a read program counter with exception. Cleared with read by host.
ME	Memory Access Exception. Occurs whenever a memory operation results in a memory access exception. Cleared when read by the host.
ICODE	Interrupt Code. Can be read and written by a compute engine or the host.
IV	Interrupt Valid. Set and read by the compute engine to indicate an interrupt to the host. Read and cleared by the host.

Figure 30

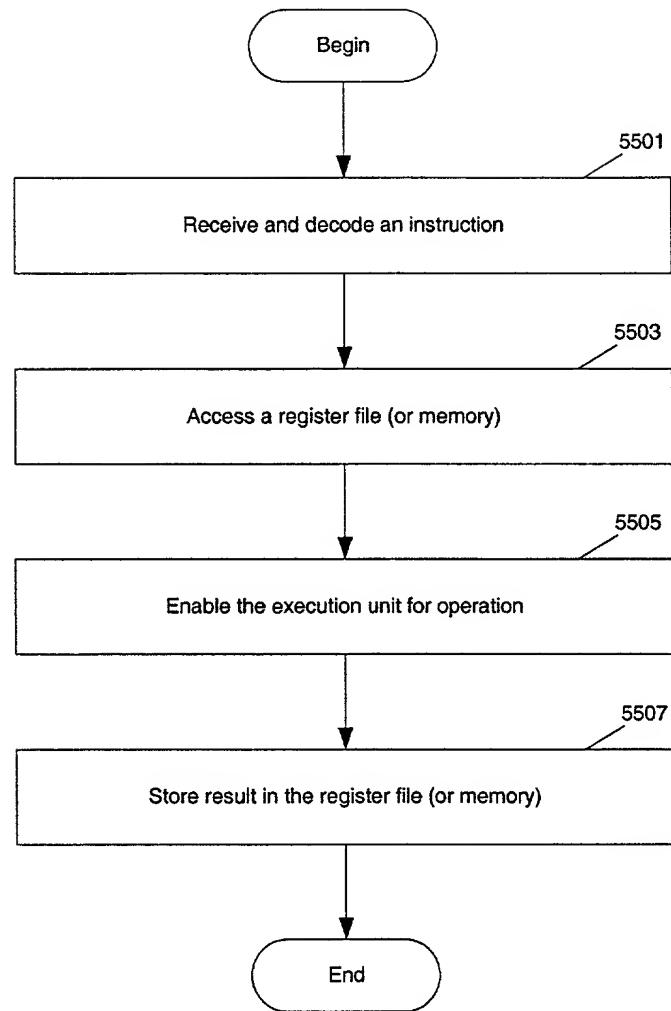


Fig. 31

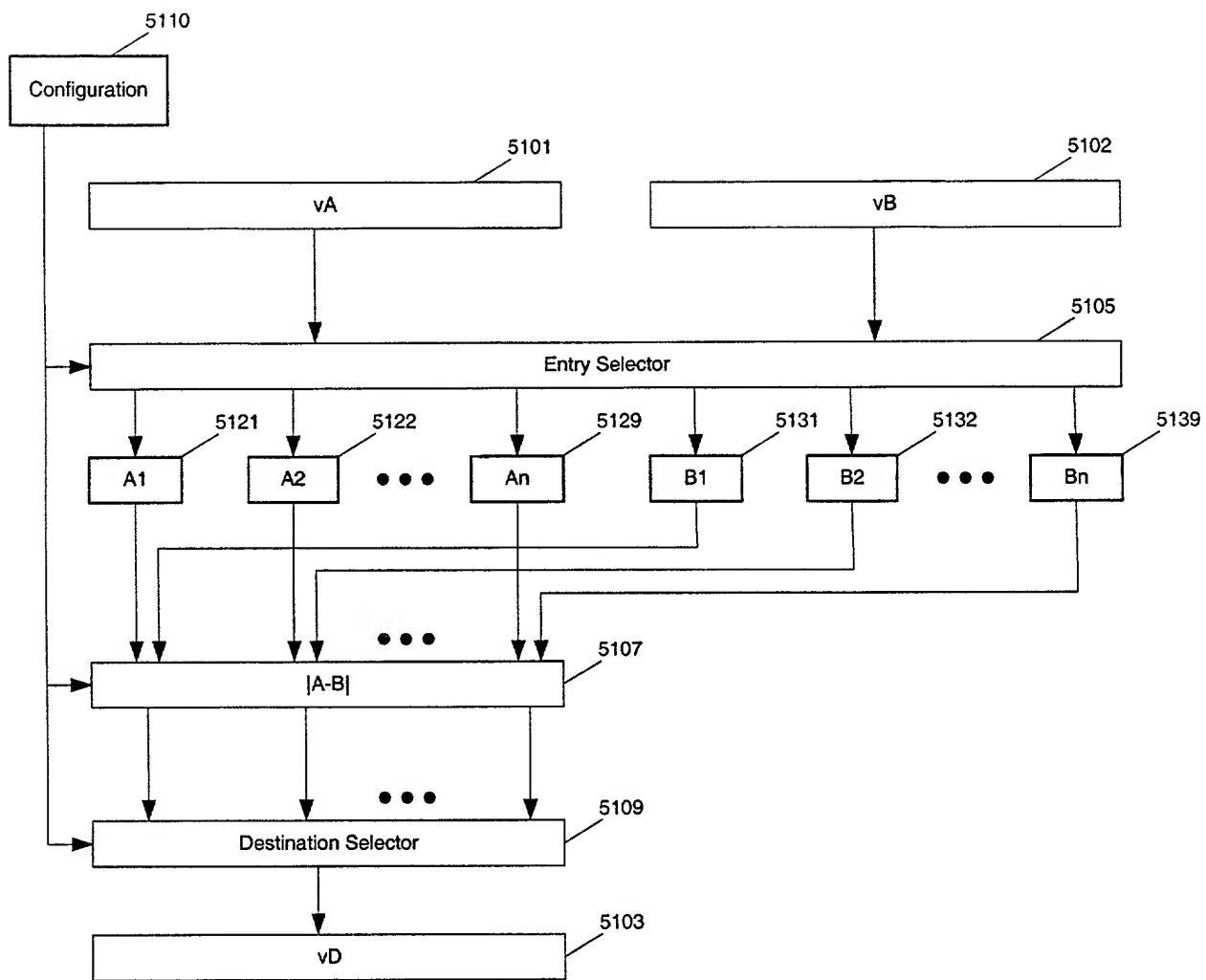


Fig. 32

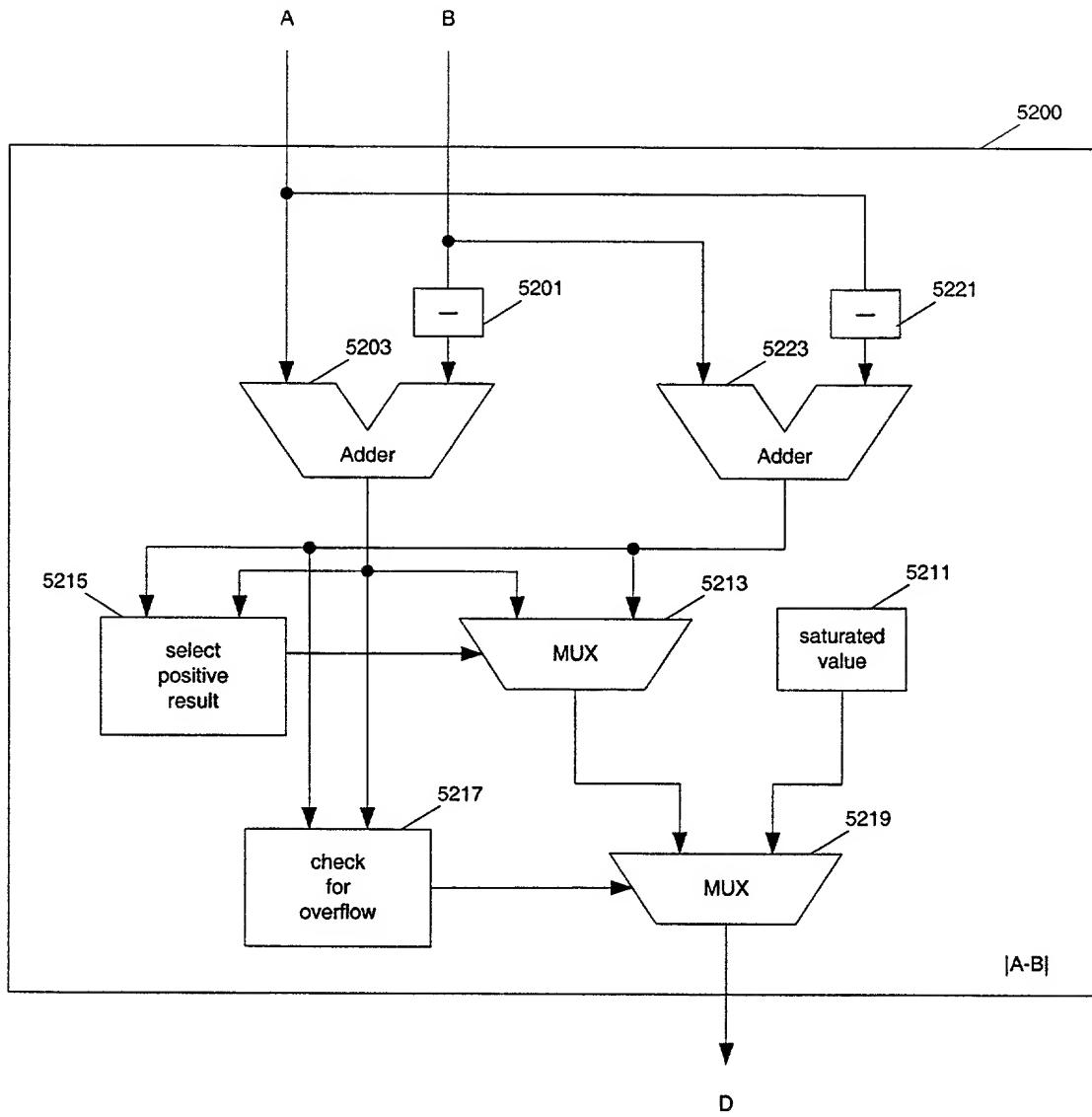


Fig. 33

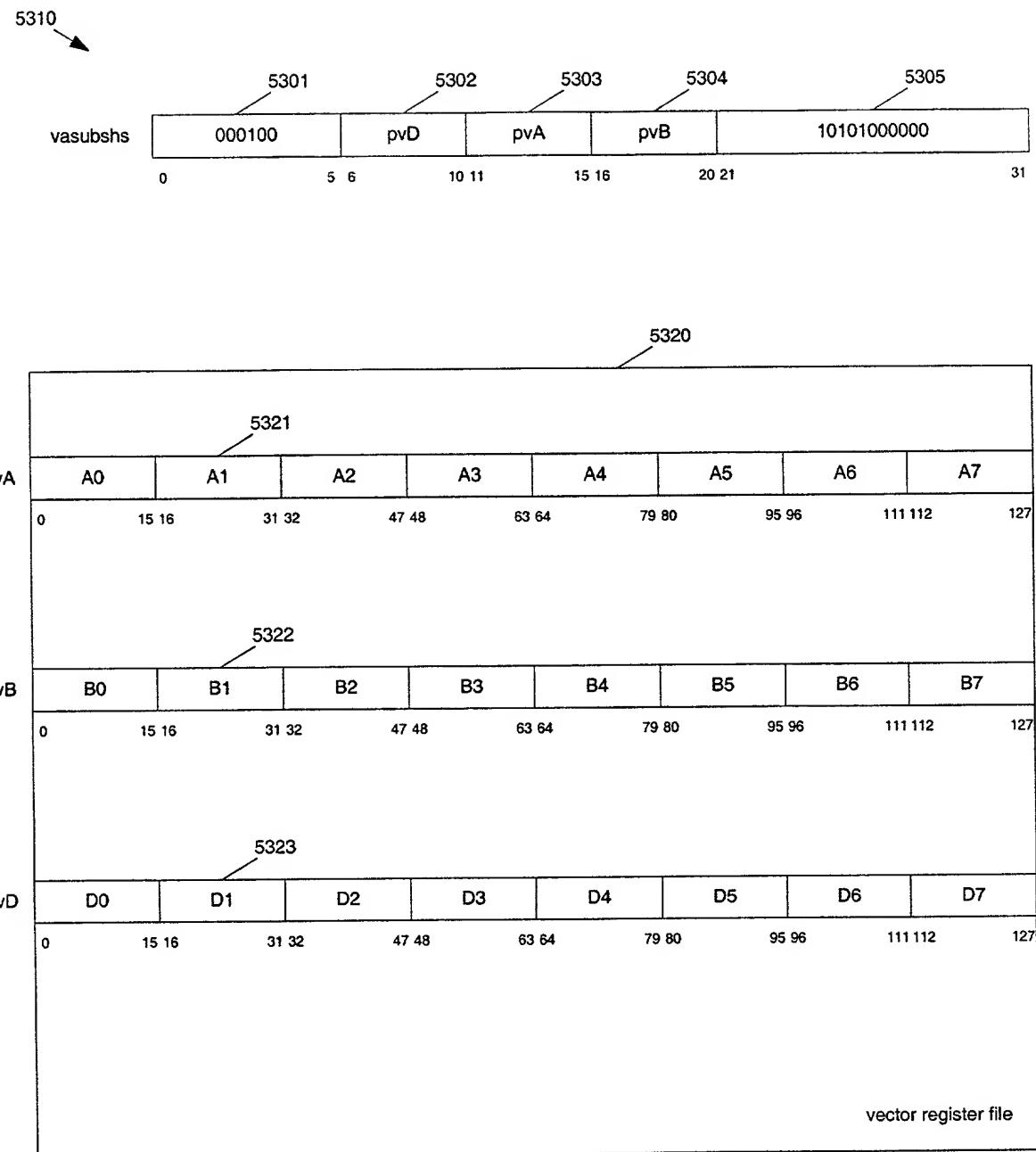


Fig. 34

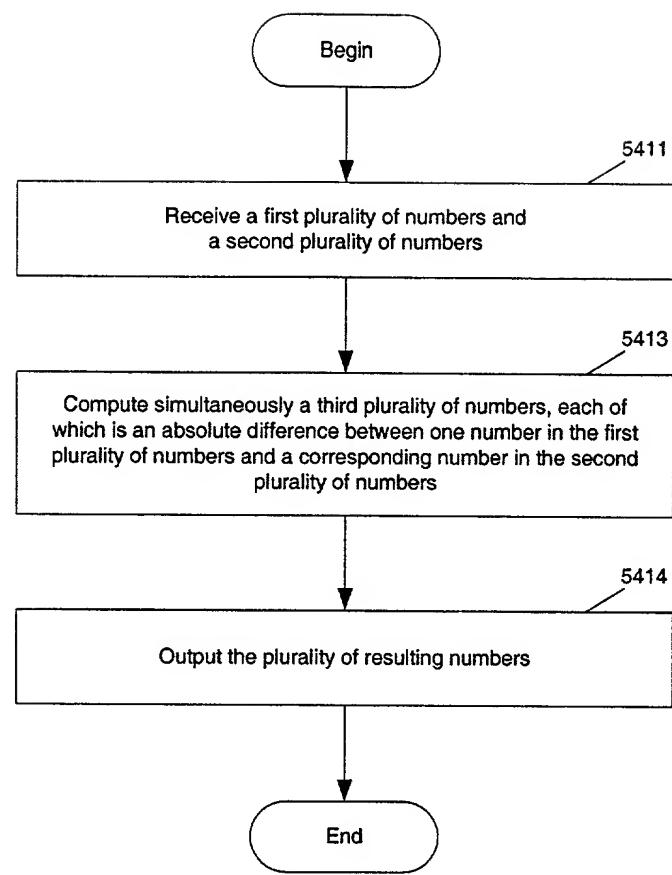


Fig. 35

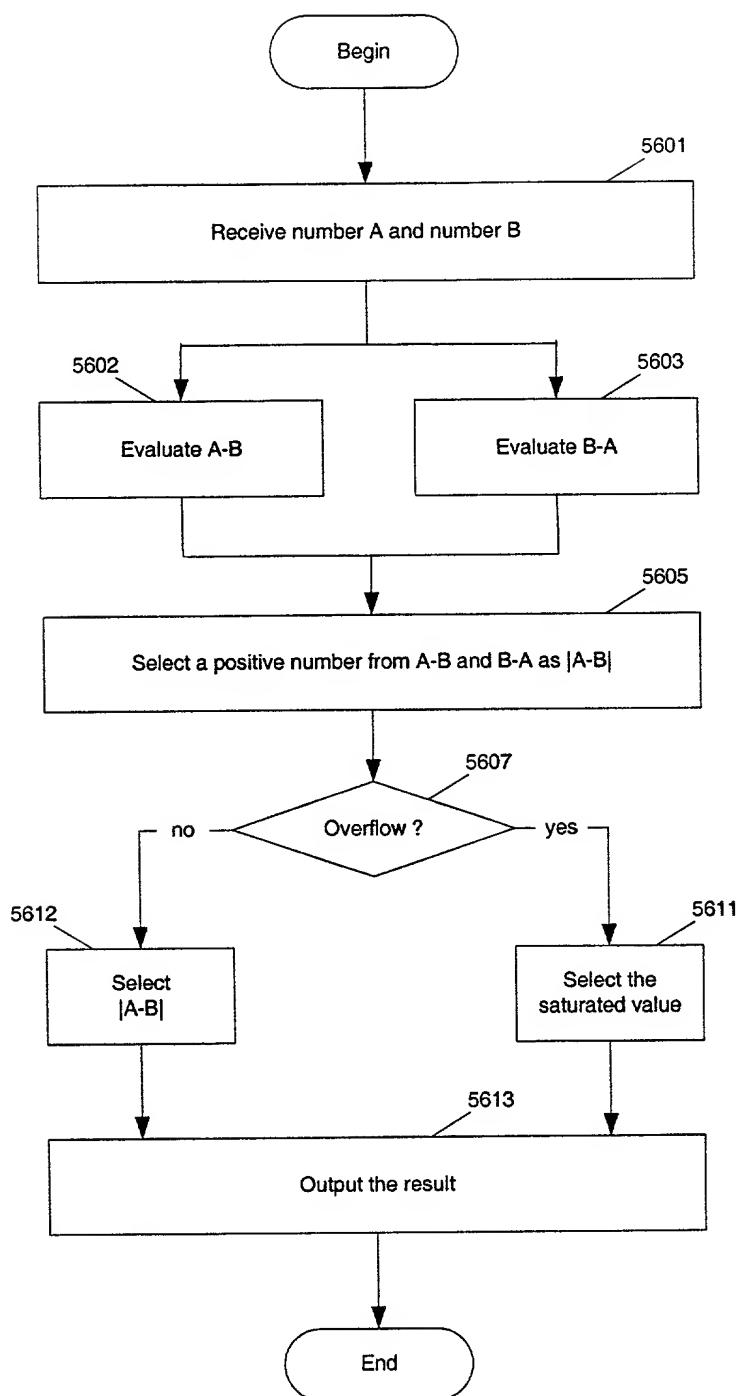


Fig. 36

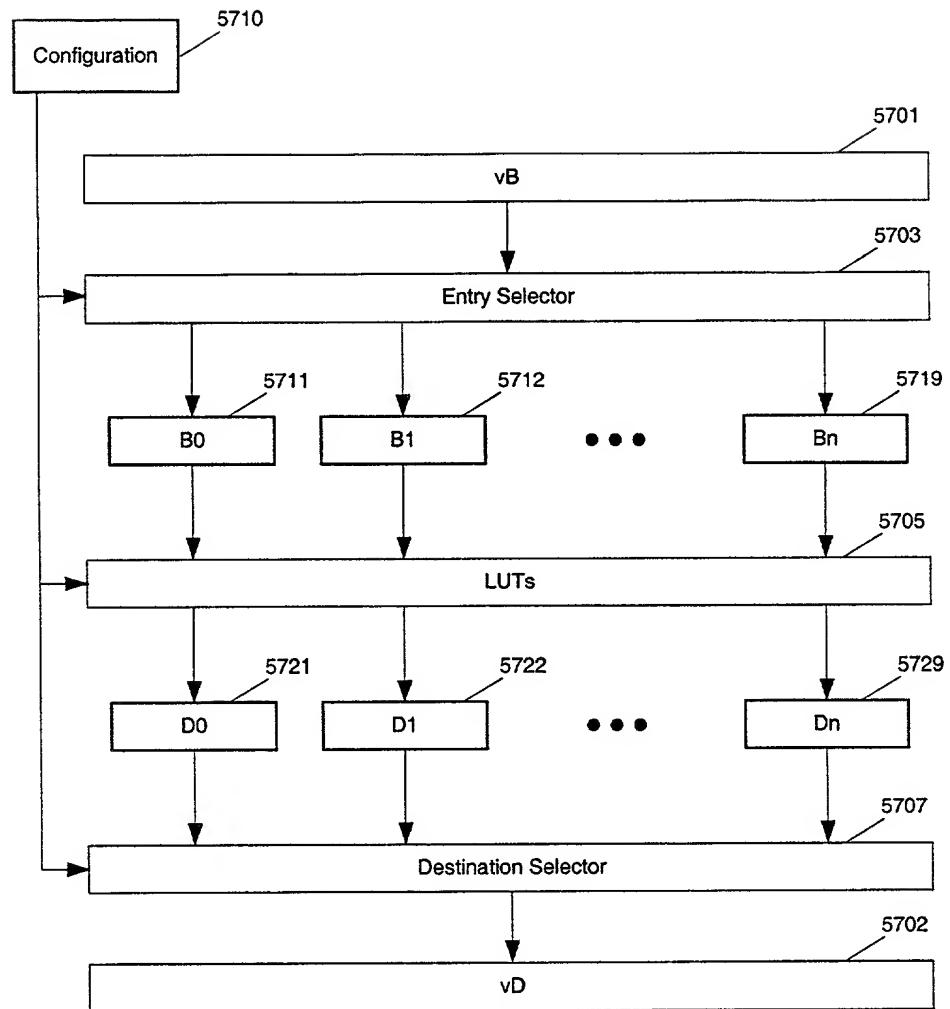


Fig. 37

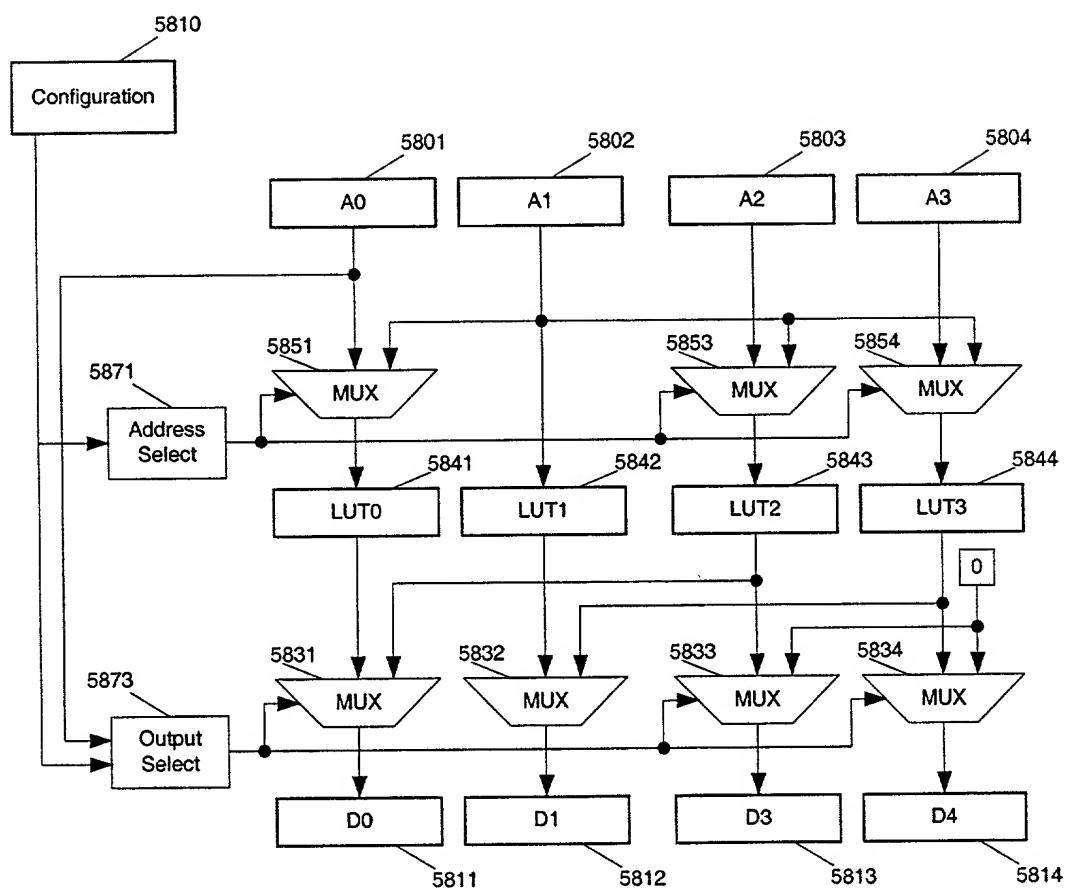


Fig. 38

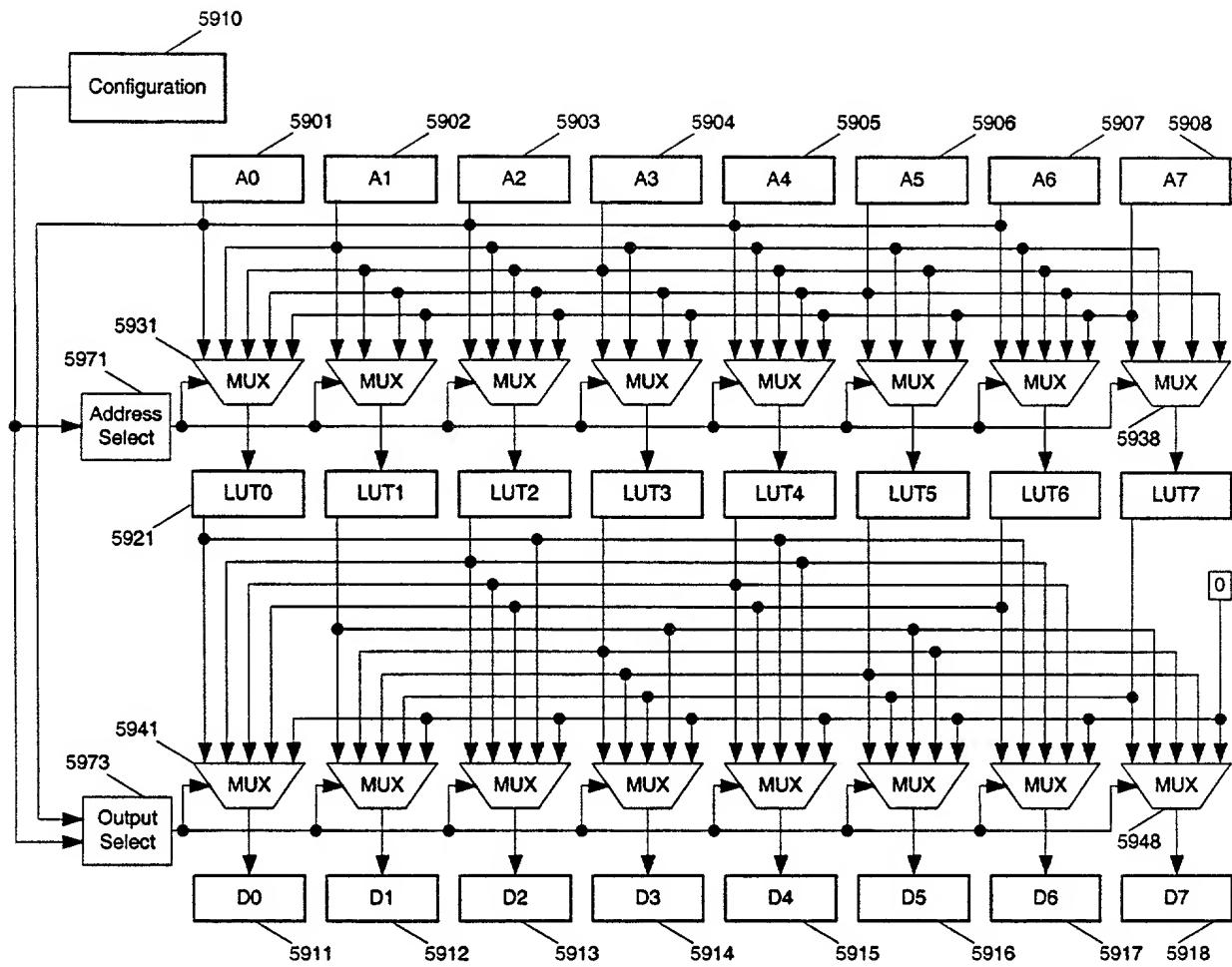


Fig. 39

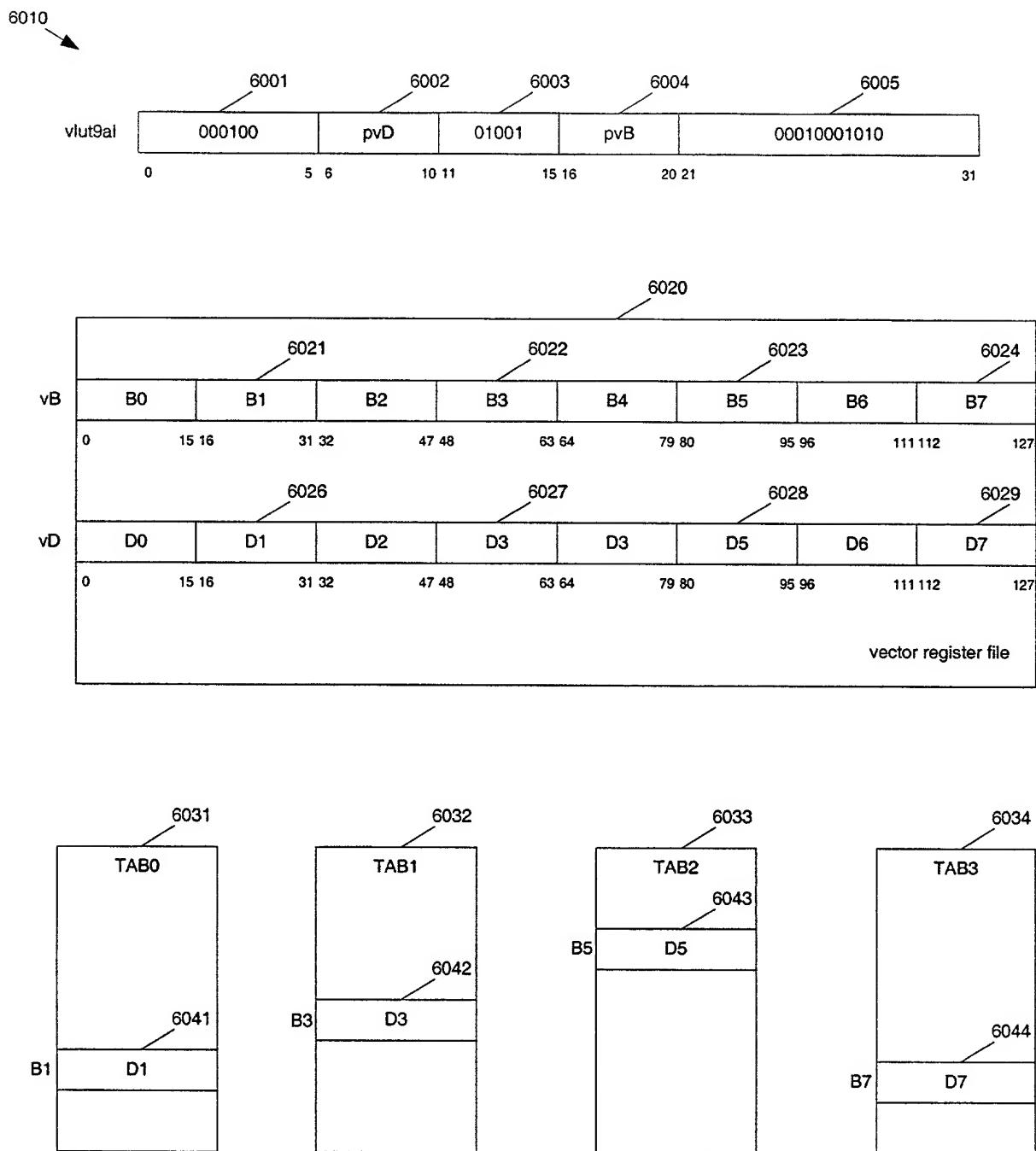


Fig. 40

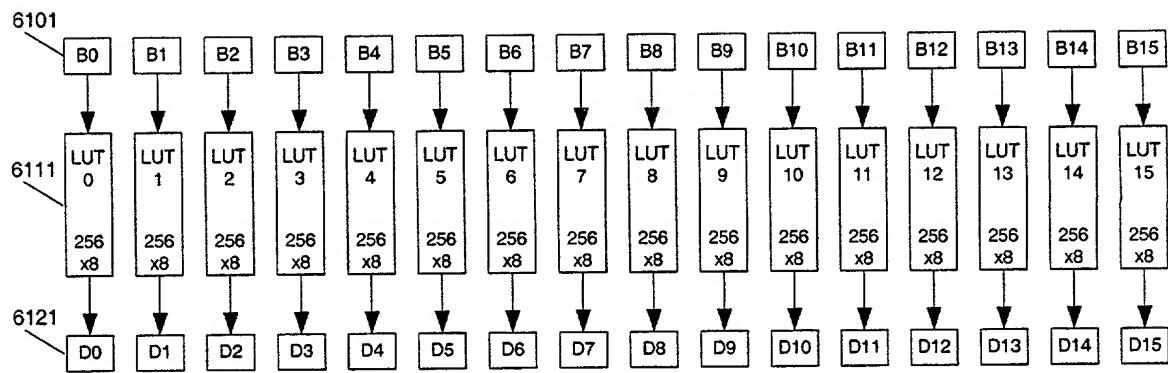


Fig. 41

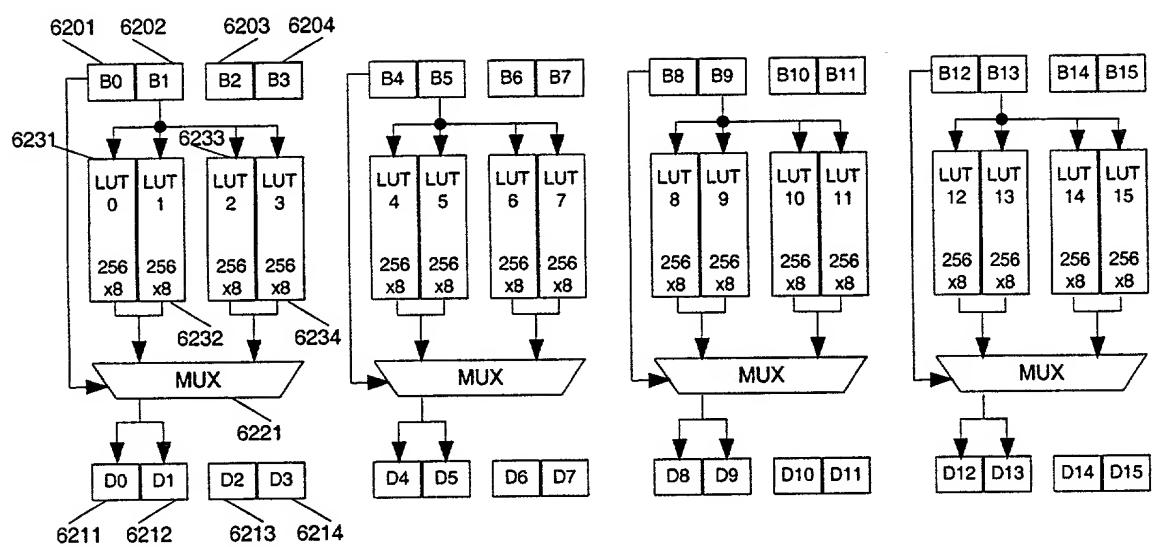


Fig. 42

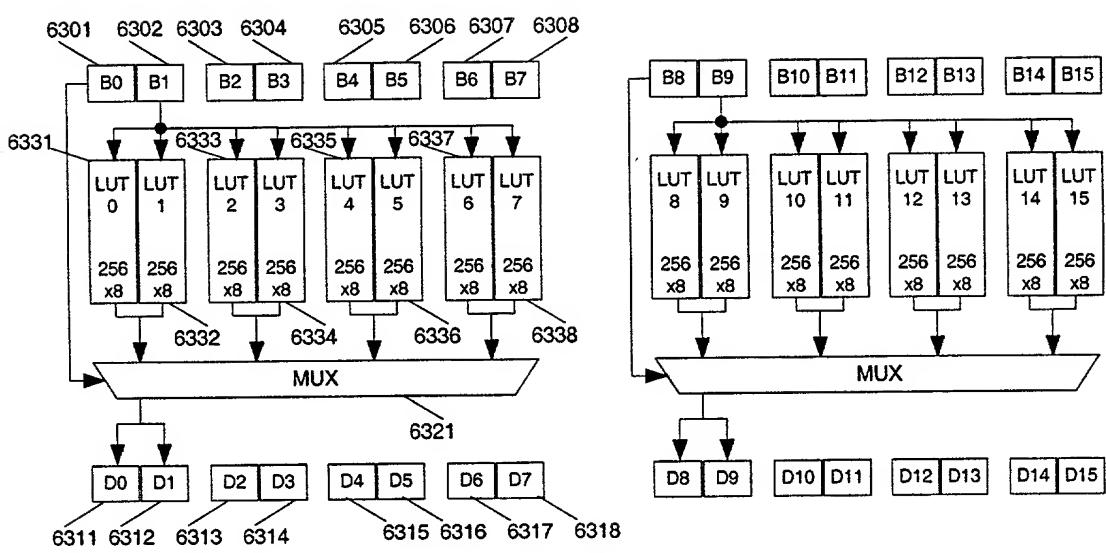


Fig. 43

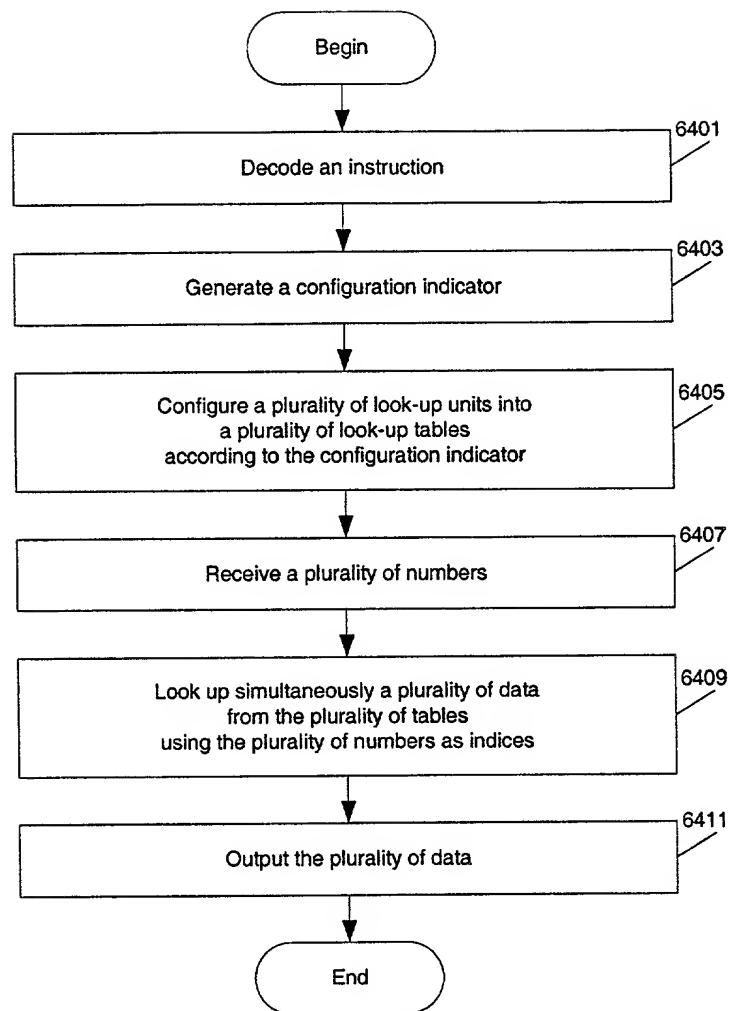


Fig. 44

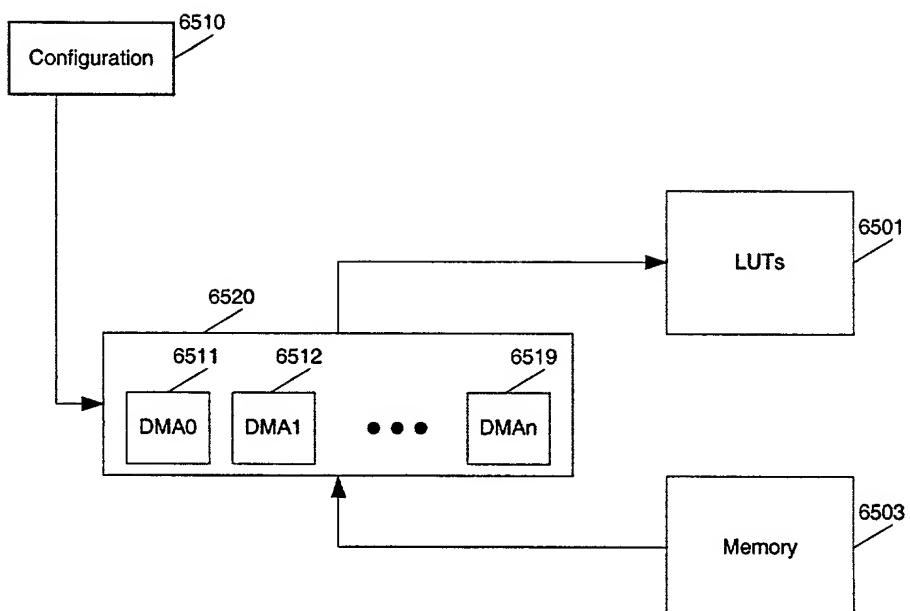


Fig. 45

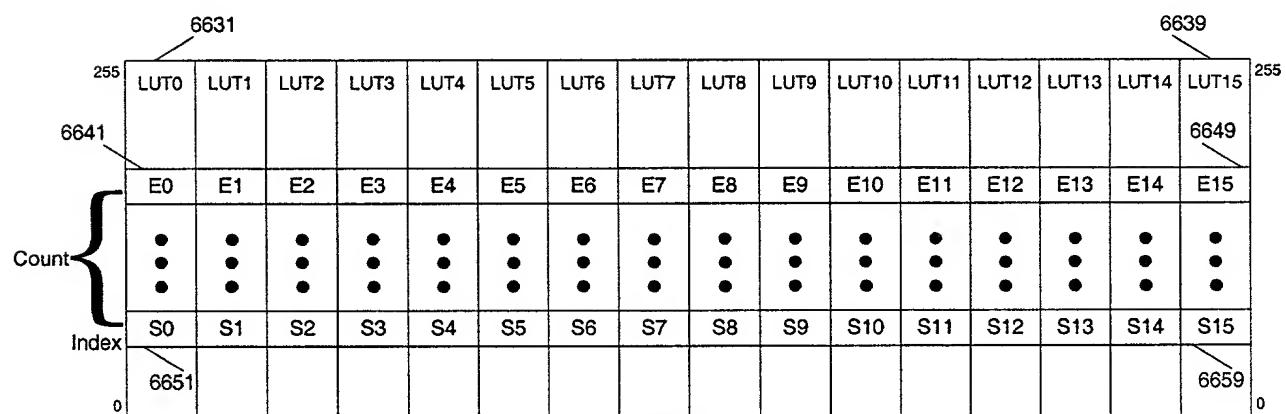
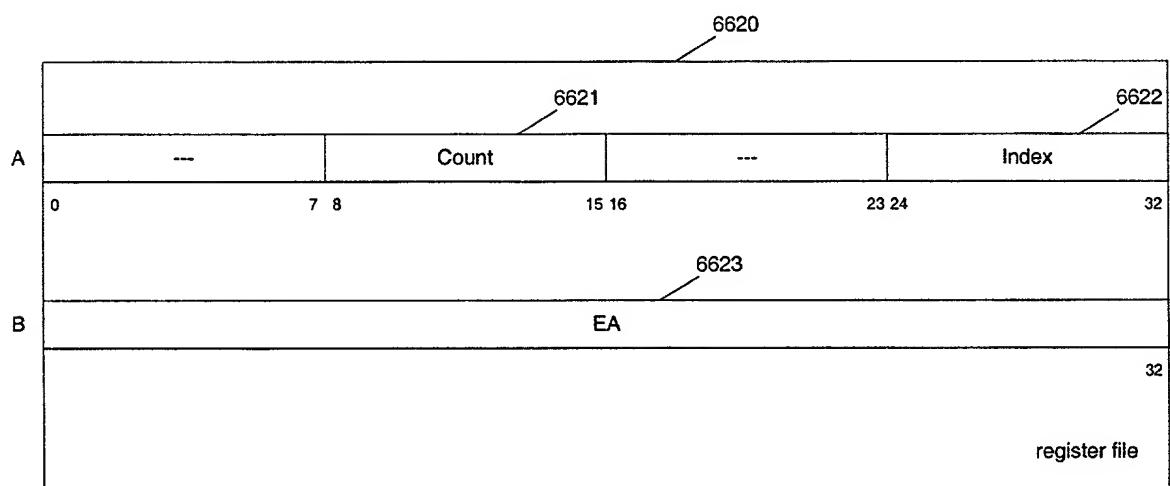
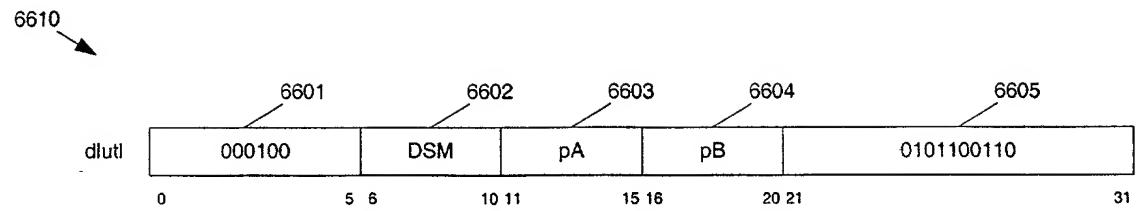


Fig. 46

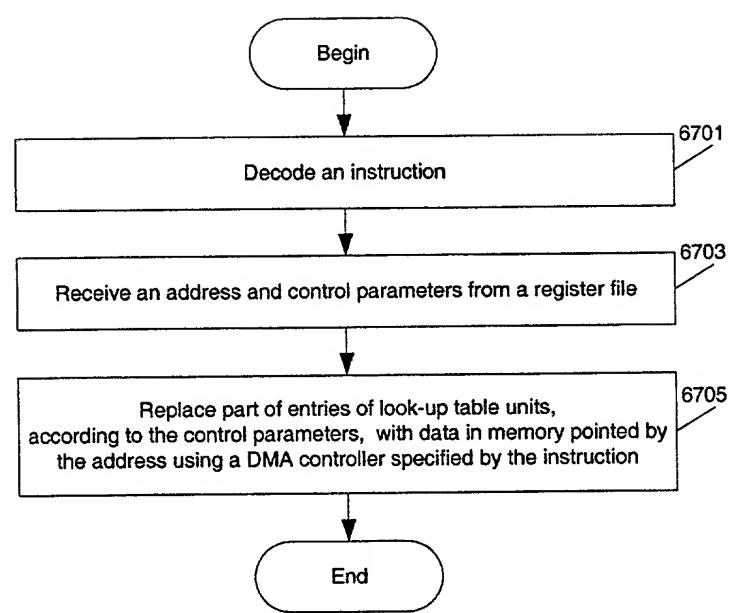


Fig. 47

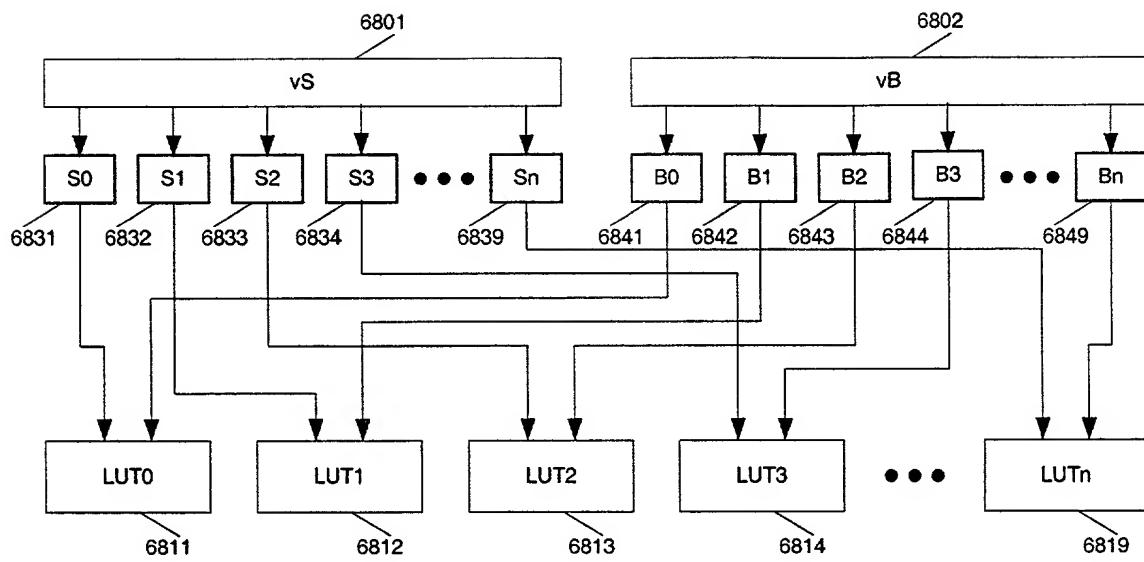


Fig. 48

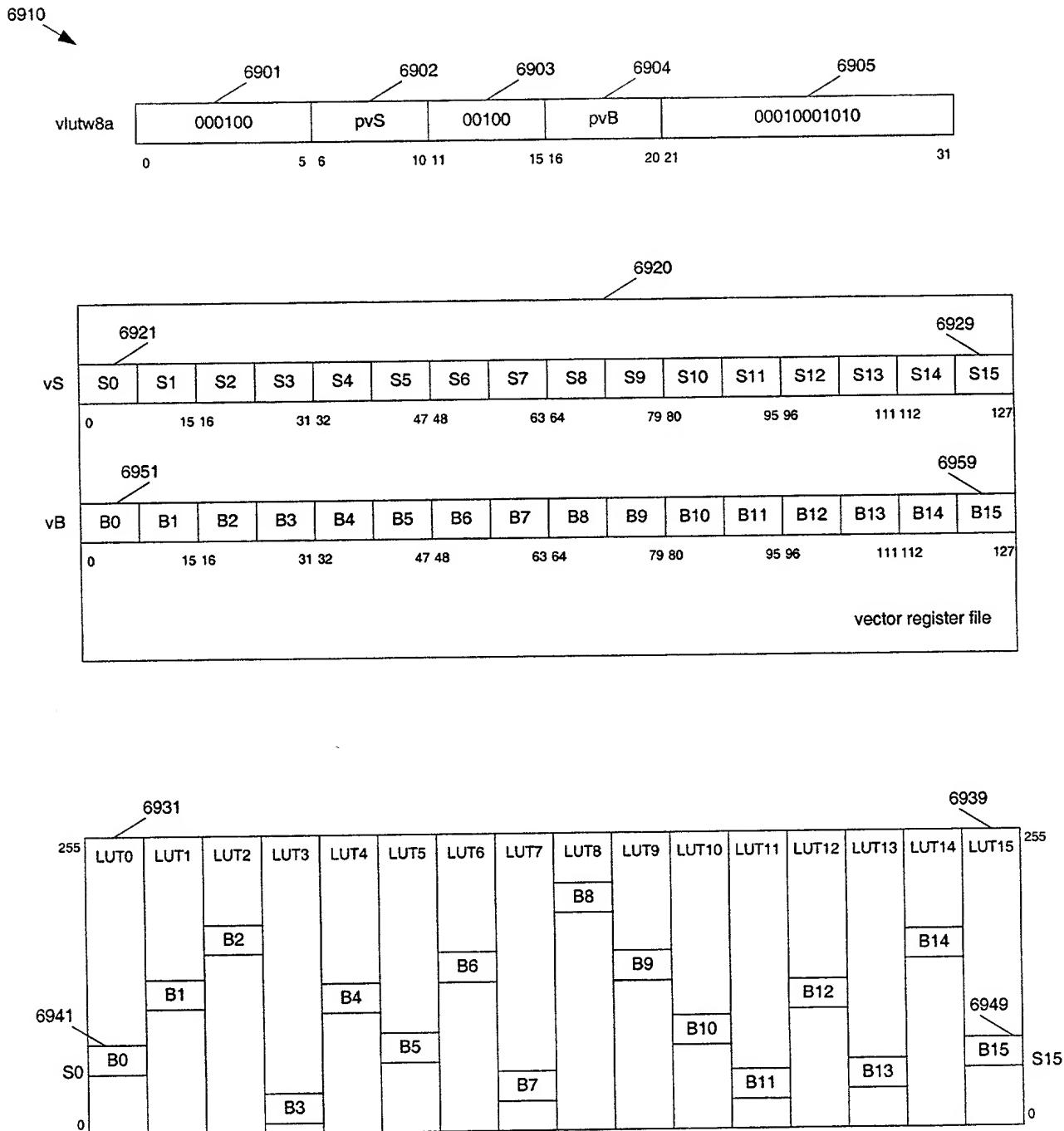


Fig. 49

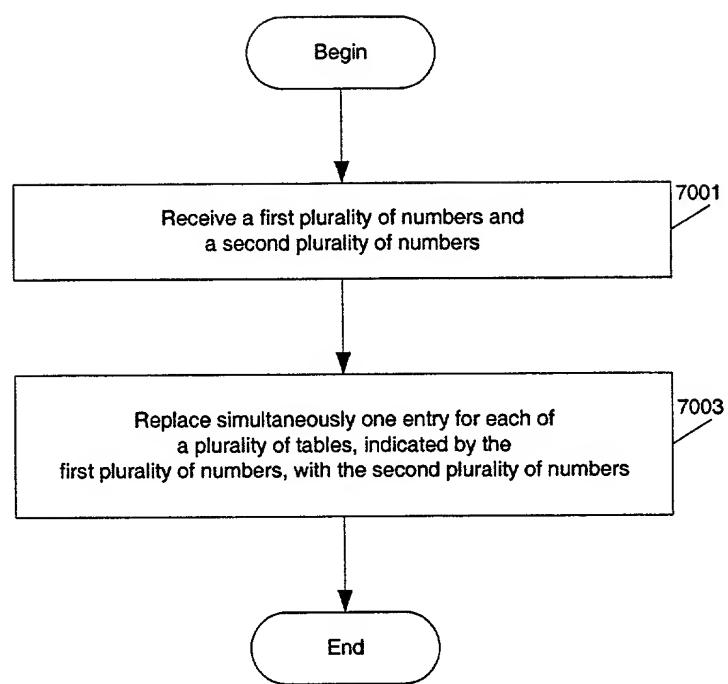


Fig. 50

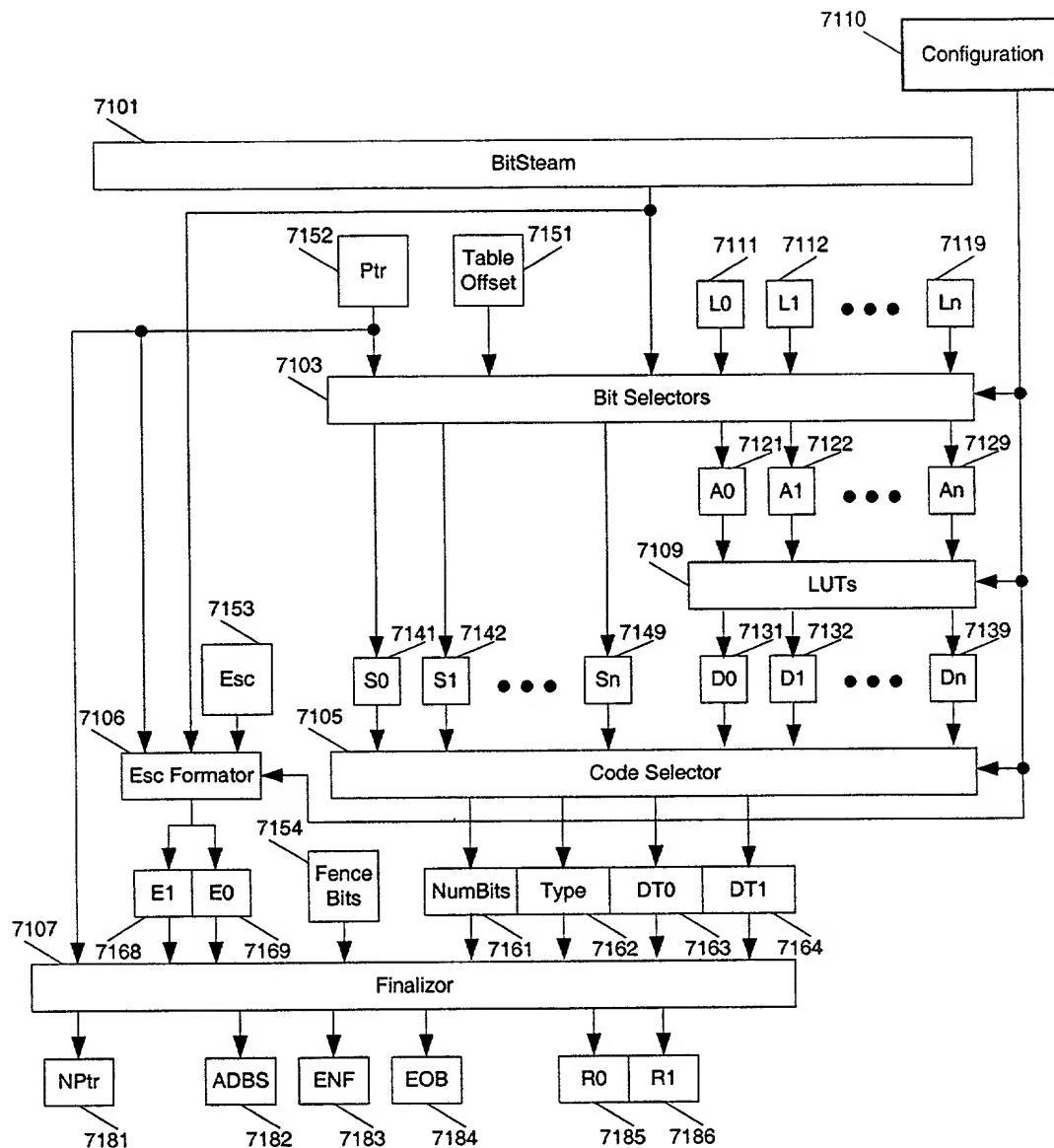


Fig. 51

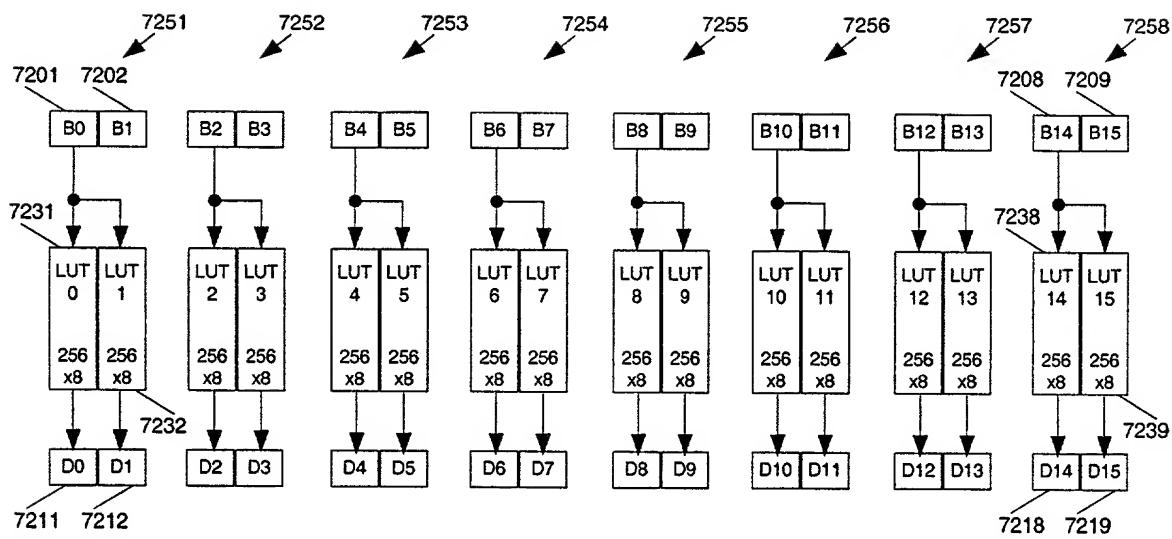


Fig. 52

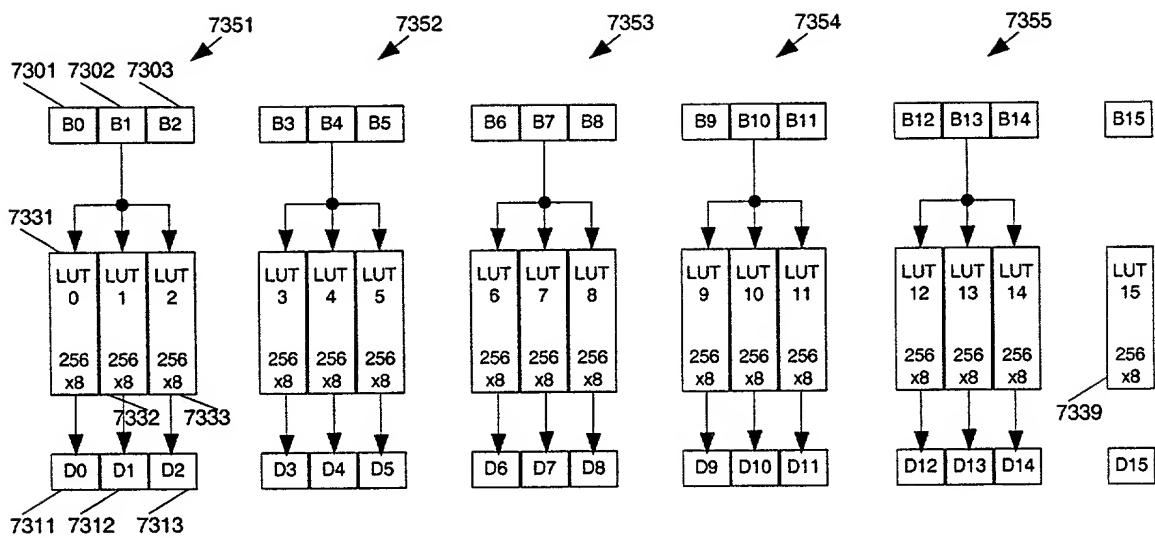


Fig. 53

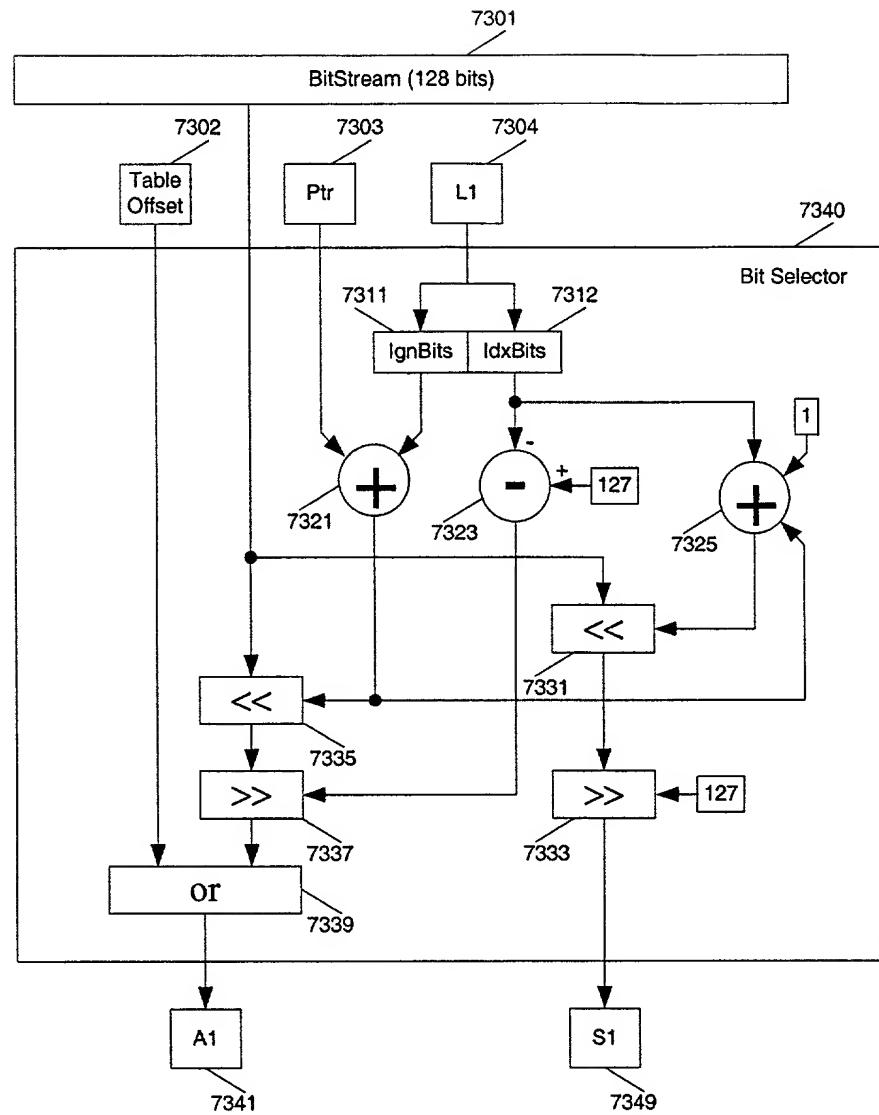


Fig. 54

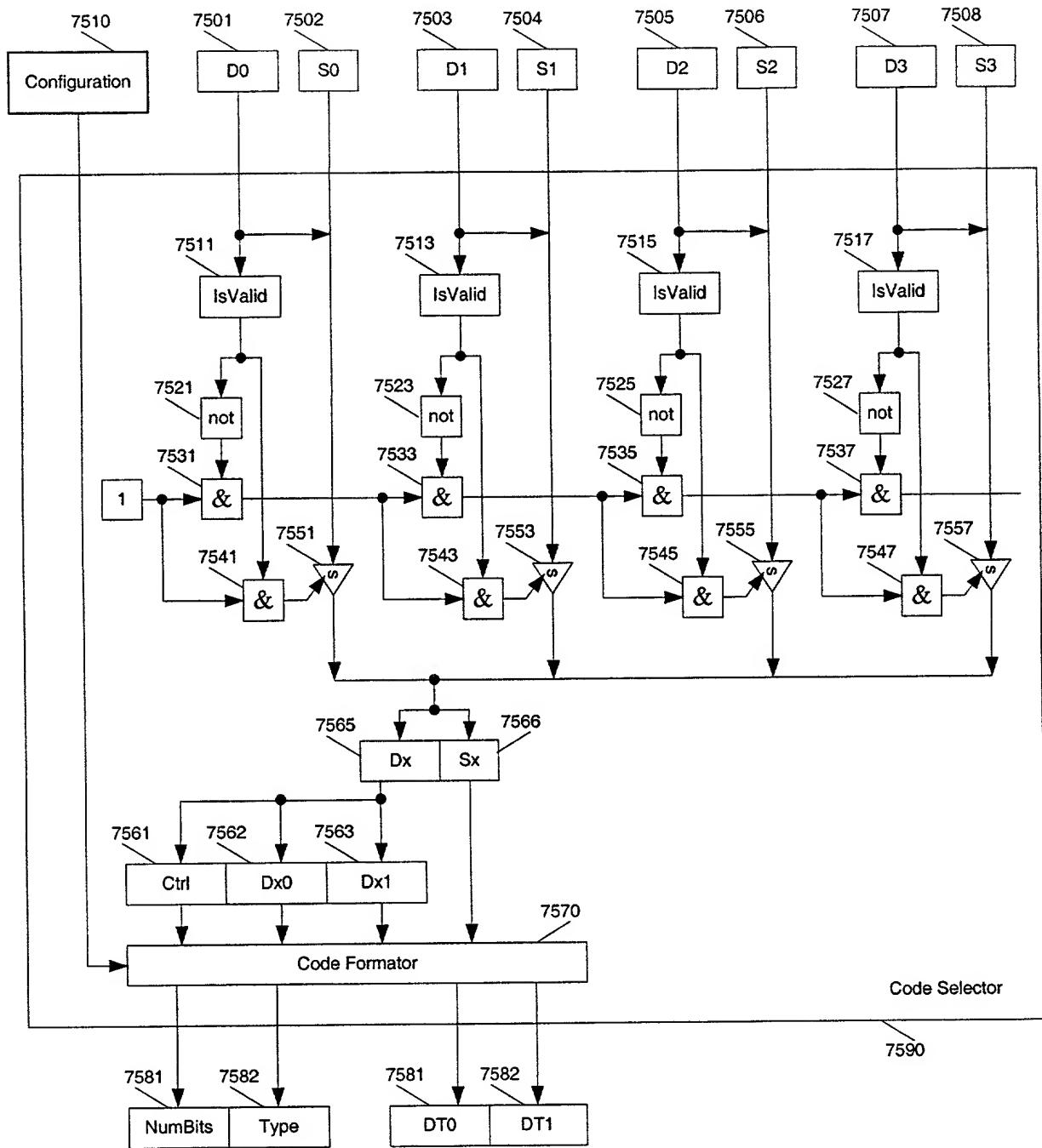


Fig. 55

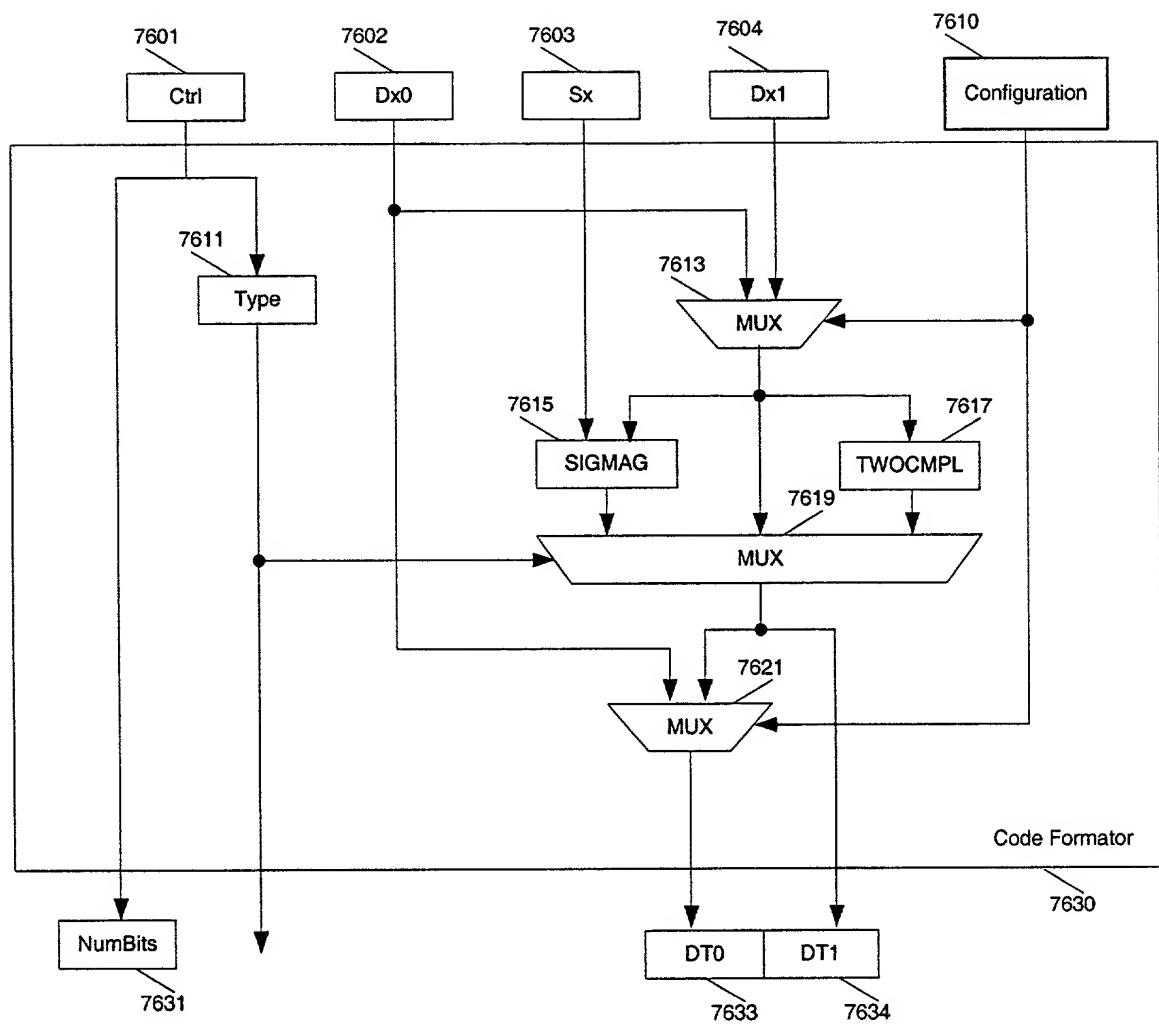


Fig. 56

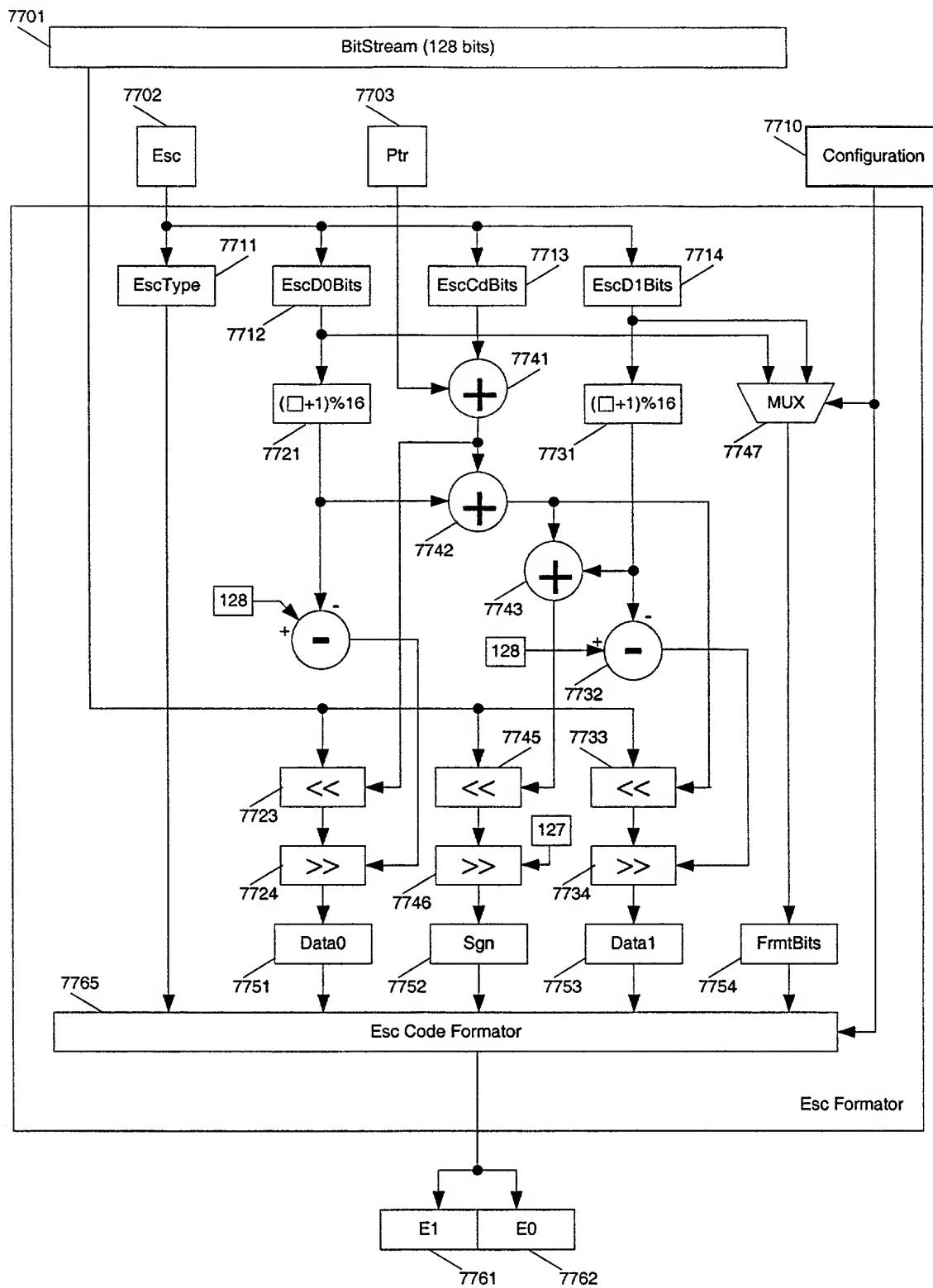


Fig. 57

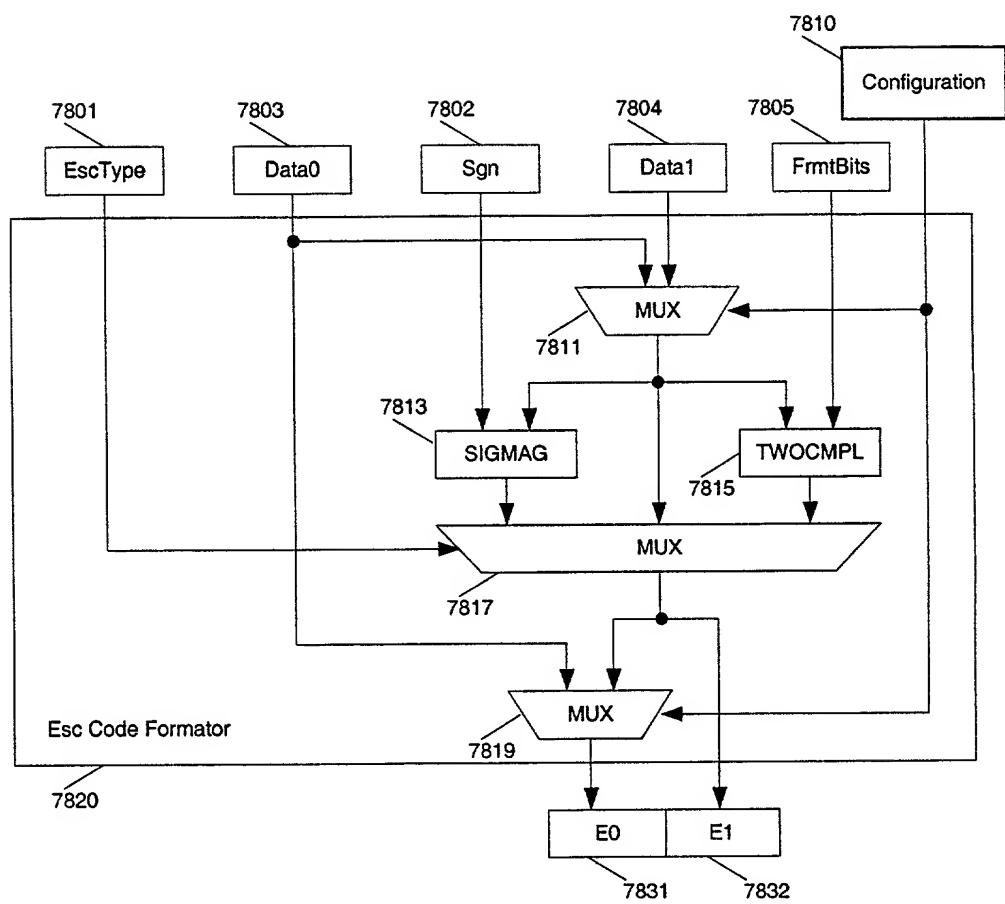


Fig. 58

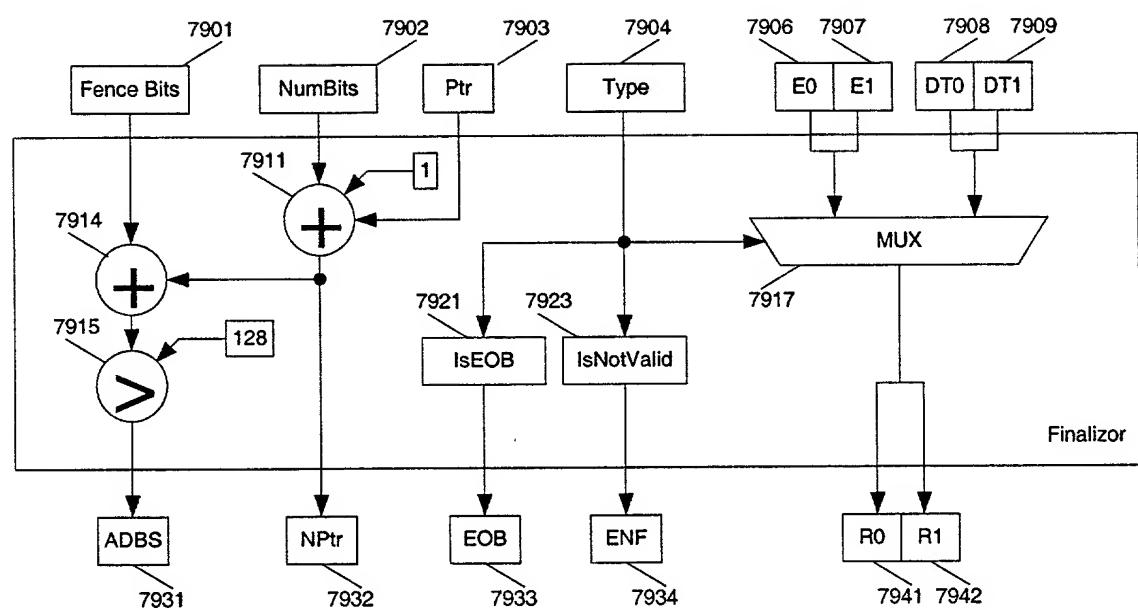


Fig. 59

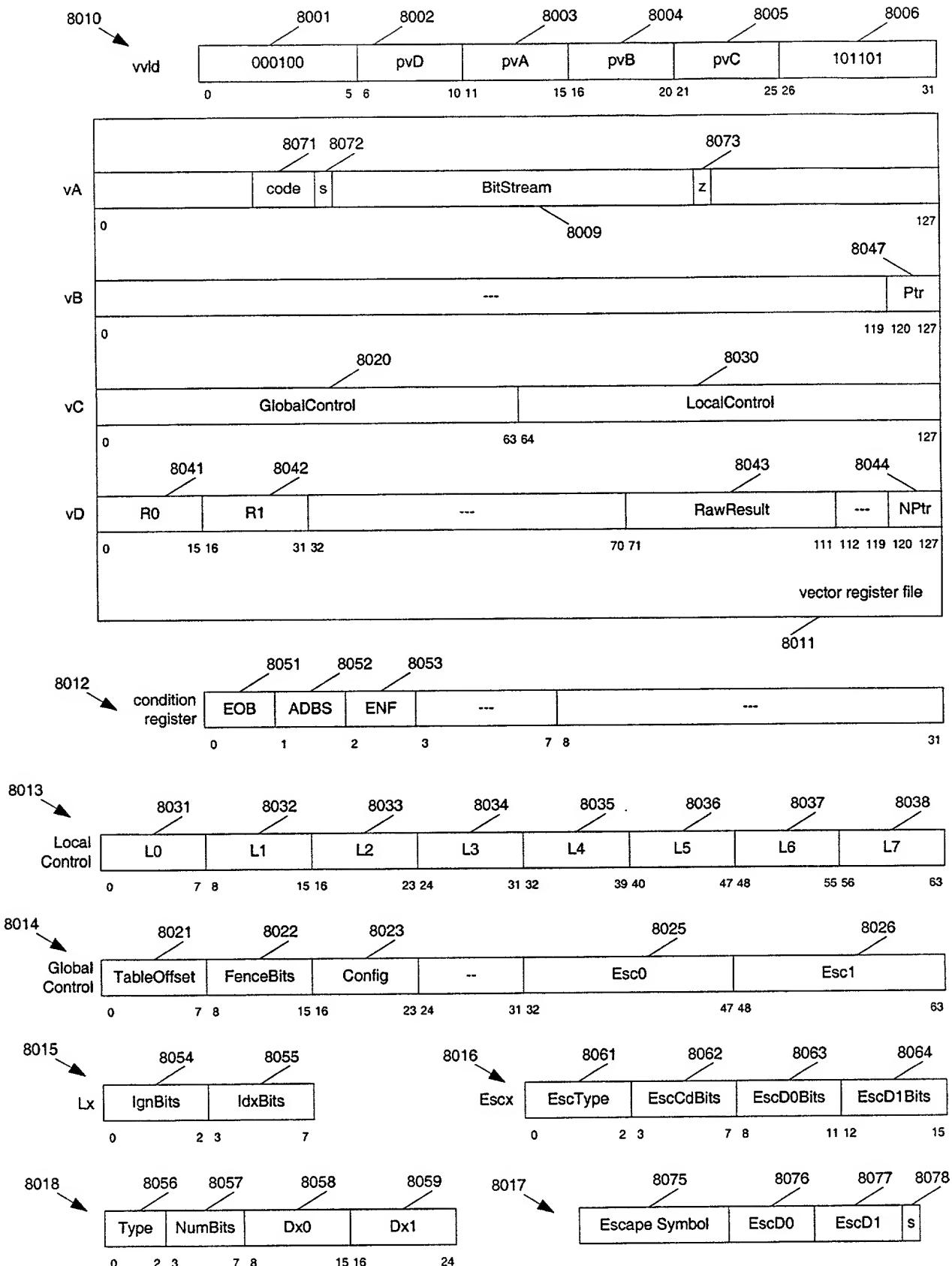


Fig. 60

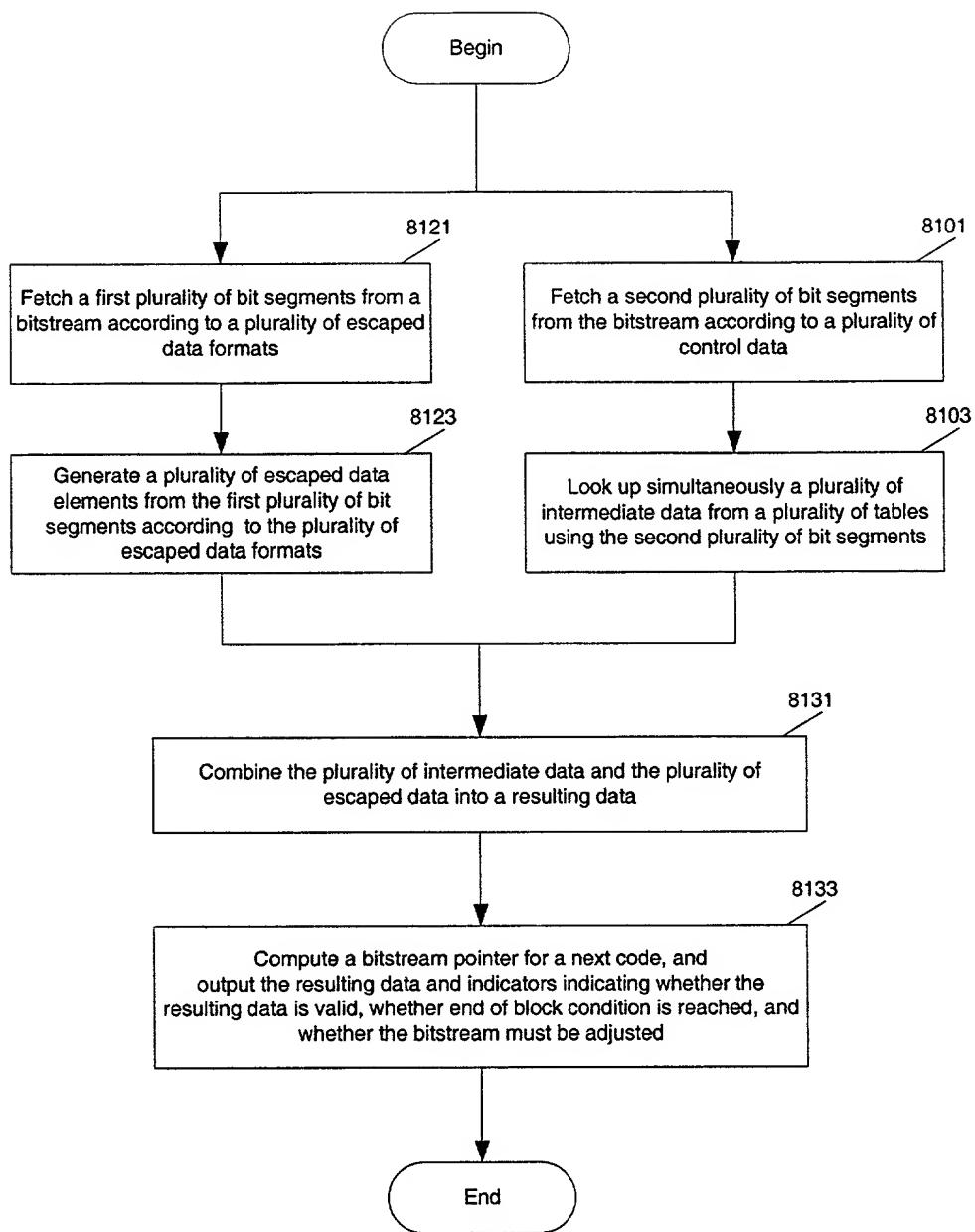


Fig. 61

Index	T1				T2				T3				T4			
	type	bits	run	level												
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02	4	2	0	1	4	6	3	-1	4	9	12	1	4	10	5	-3
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29	4	5	2	-1	5	8	1	7	0	0	0	0	4	11	1	-13
2a	4	5	1	2	5	8	0	12	0	0	0	0	4	11	1	14
2b	4	5	1	-2	5	8	0	13	0	0	0	0	4	11	1	-14
2c	4	5	0	5	5	8	0	14	0	0	0	0	4	11	2	0
2d	4	5	0	-5	5	8	0	15	0	0	0	0	4	11	3	0
2e	4	5	0	6	5	8	0	16	0	0	0	0	4	11	4	0
2f	4	5	0	-6	5	8	0	17	0	0	0	0	4	11	5	0
30	0	0	0	0	0	0	0	0	0	0	0	0	5	12	7	2
31	0	0	0	0	0	0	0	0	0	0	0	0	5	12	8	2
32	0	0	0	0	0	0	0	0	0	0	0	0	5	12	9	2
33	0	0	0	0	0	0	0	0	0	0	0	0	5	12	10	2
34	0	0	0	0	0	0	0	0	0	0	0	0	5	12	7	3
35	0	0	0	0	0	0	0	0	0	0	0	0	5	12	8	3
36	0	0	0	0	0	0	0	0	0	0	0	0	5	12	4	5
37	0	0	0	0	0	0	0	0	0	0	0	0	5	12	3	7
38	0	0	0	0	0	0	0	0	0	0	0	0	5	12	2	7
39	0	0	0	0	0	0	0	0	0	0	0	0	5	12	2	8
3a	0	0	0	0	0	0	0	0	0	0	0	0	5	12	2	9
3b	0	0	0	0	0	0	0	0	0	0	0	0	5	12	2	10
3c	0	0	0	0	2	12	0	0	0	0	0	0	5	12	2	11
3d	0	0	0	0	2	12	0	0	0	0	0	0	5	12	1	15
3e	0	0	0	0	3	15	0	0	0	0	0	0	5	12	1	16
3f	0	0	0	0	3	15	0	0	0	0	0	0	5	12	1	17
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
...	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Fig. 62

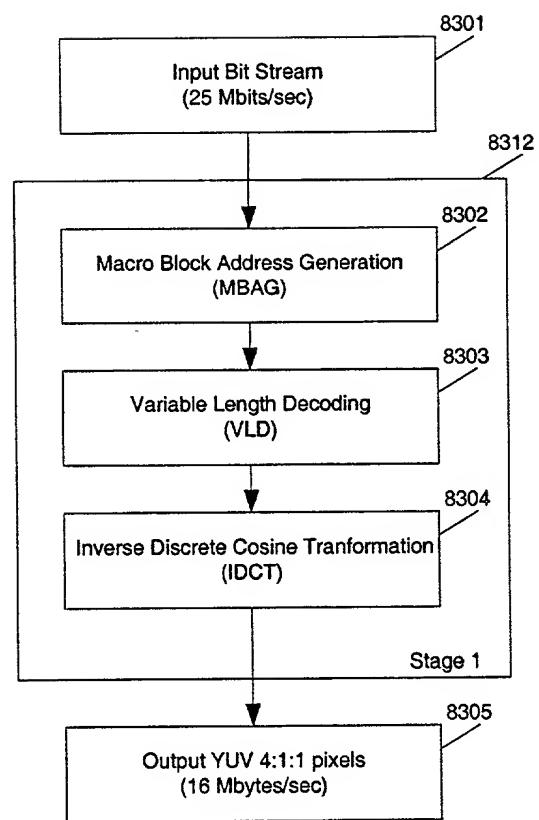


Fig. 63

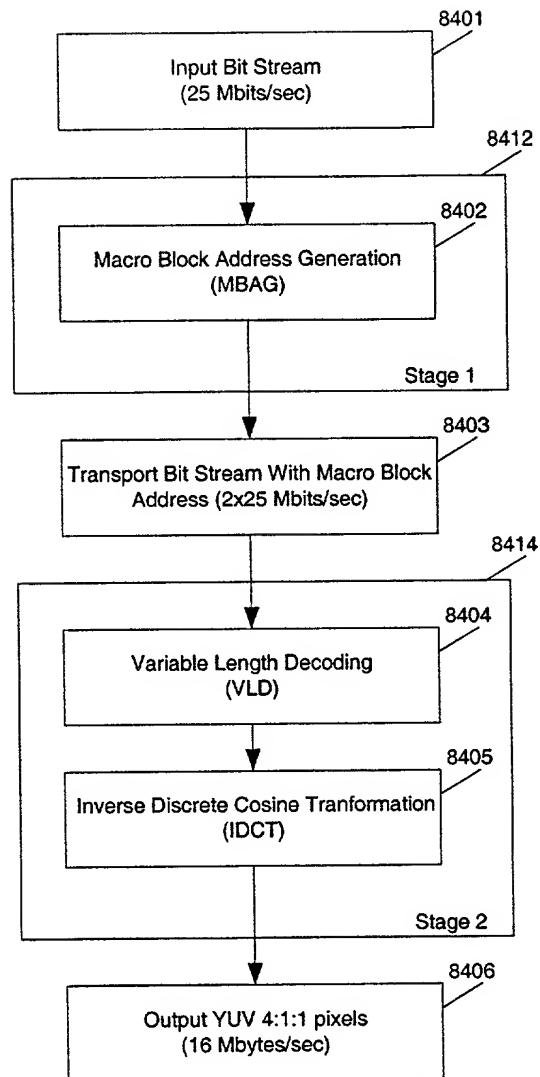


Fig. 64

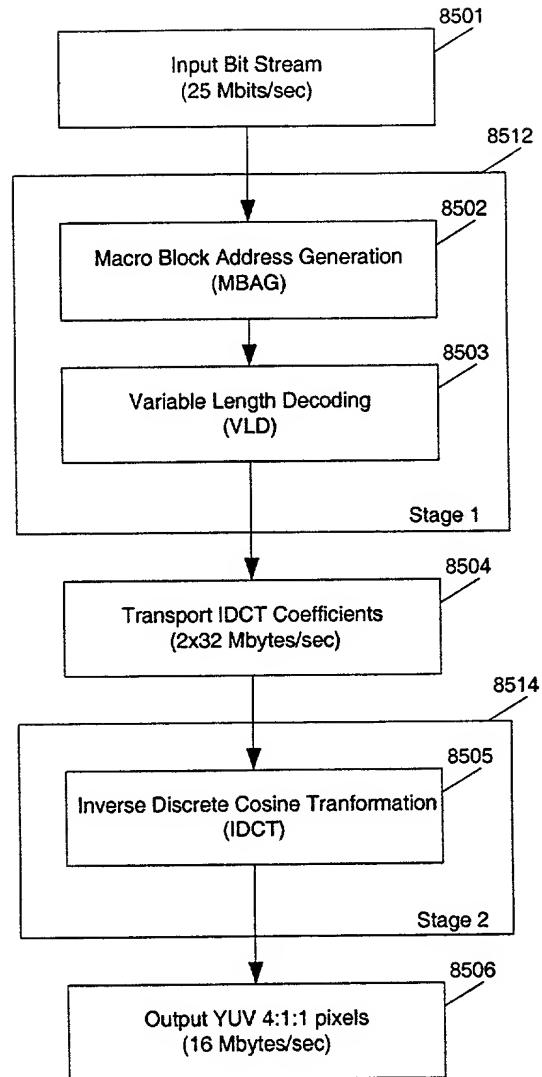


Fig. 65

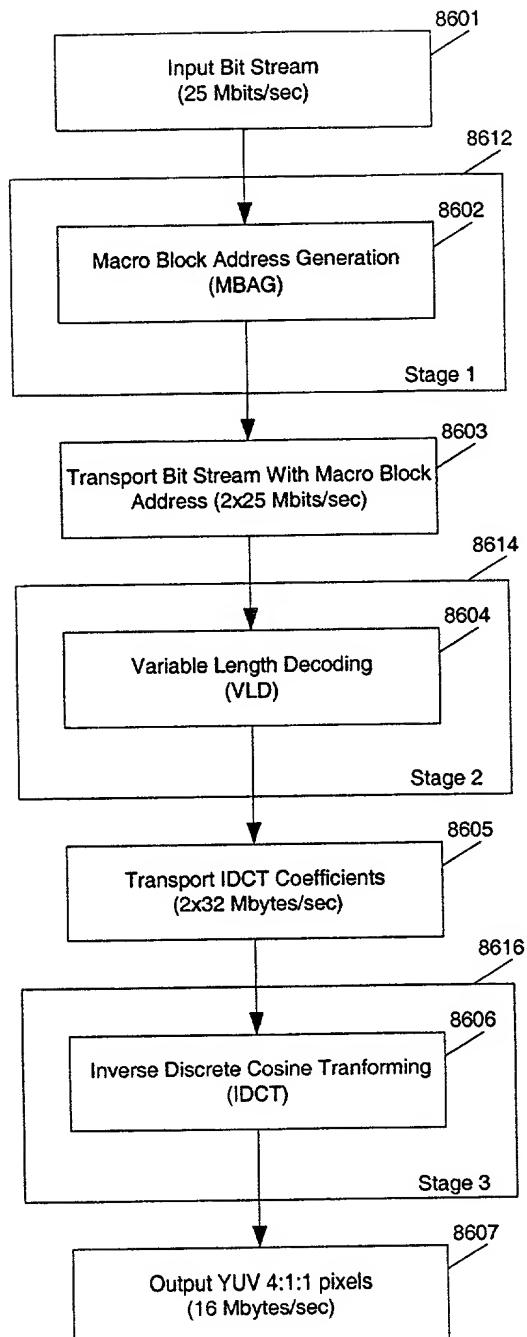


Fig. 66

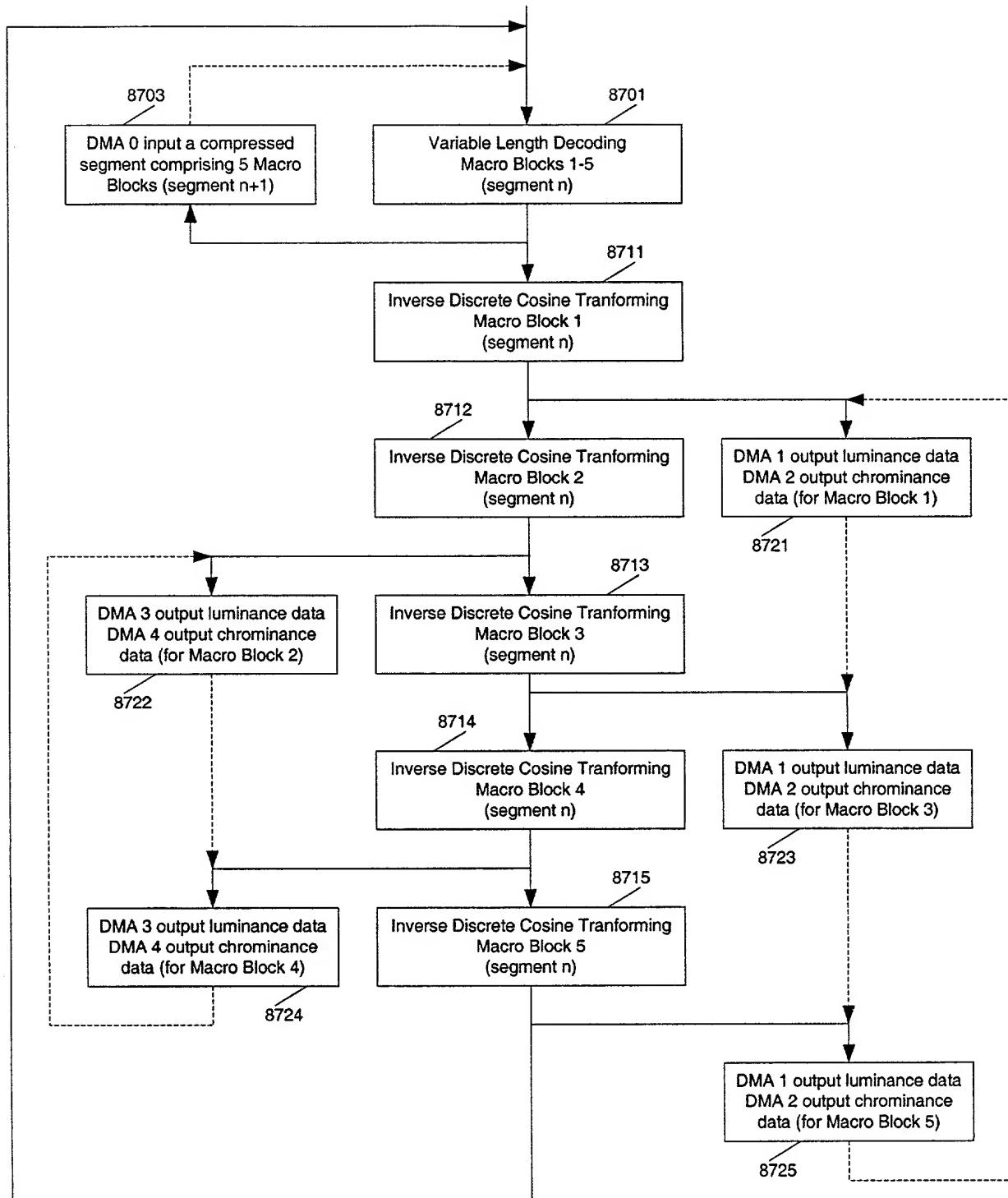


Fig. 67

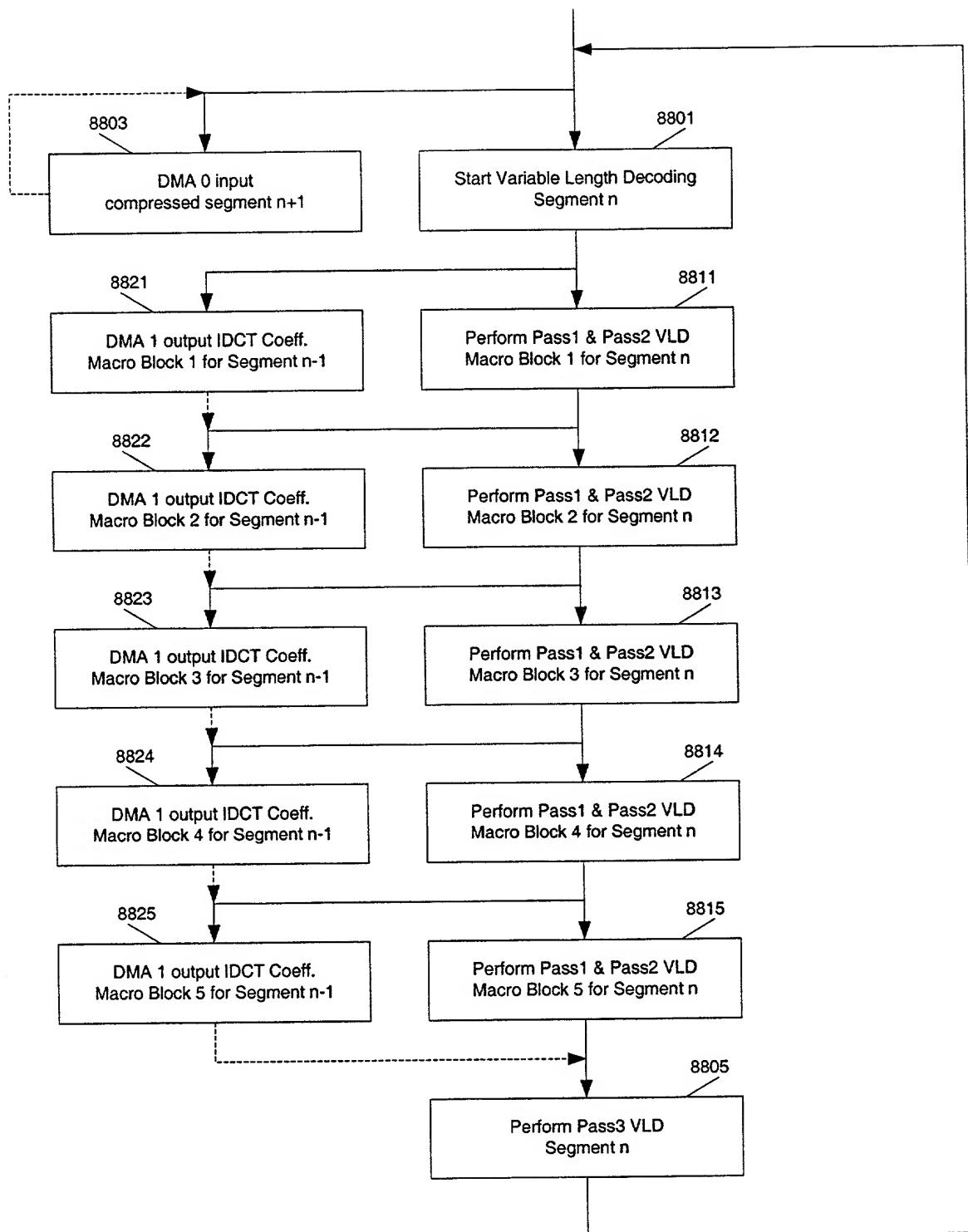


Fig. 68

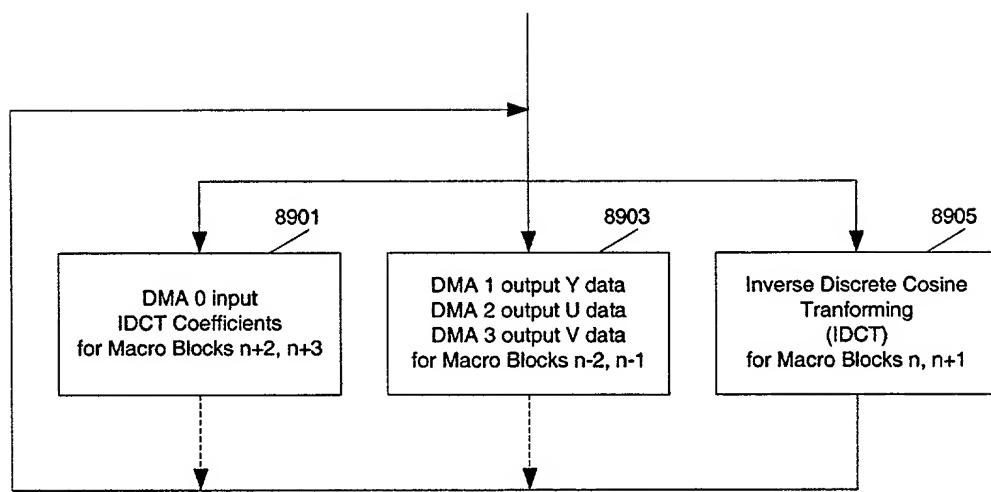


Fig. 69

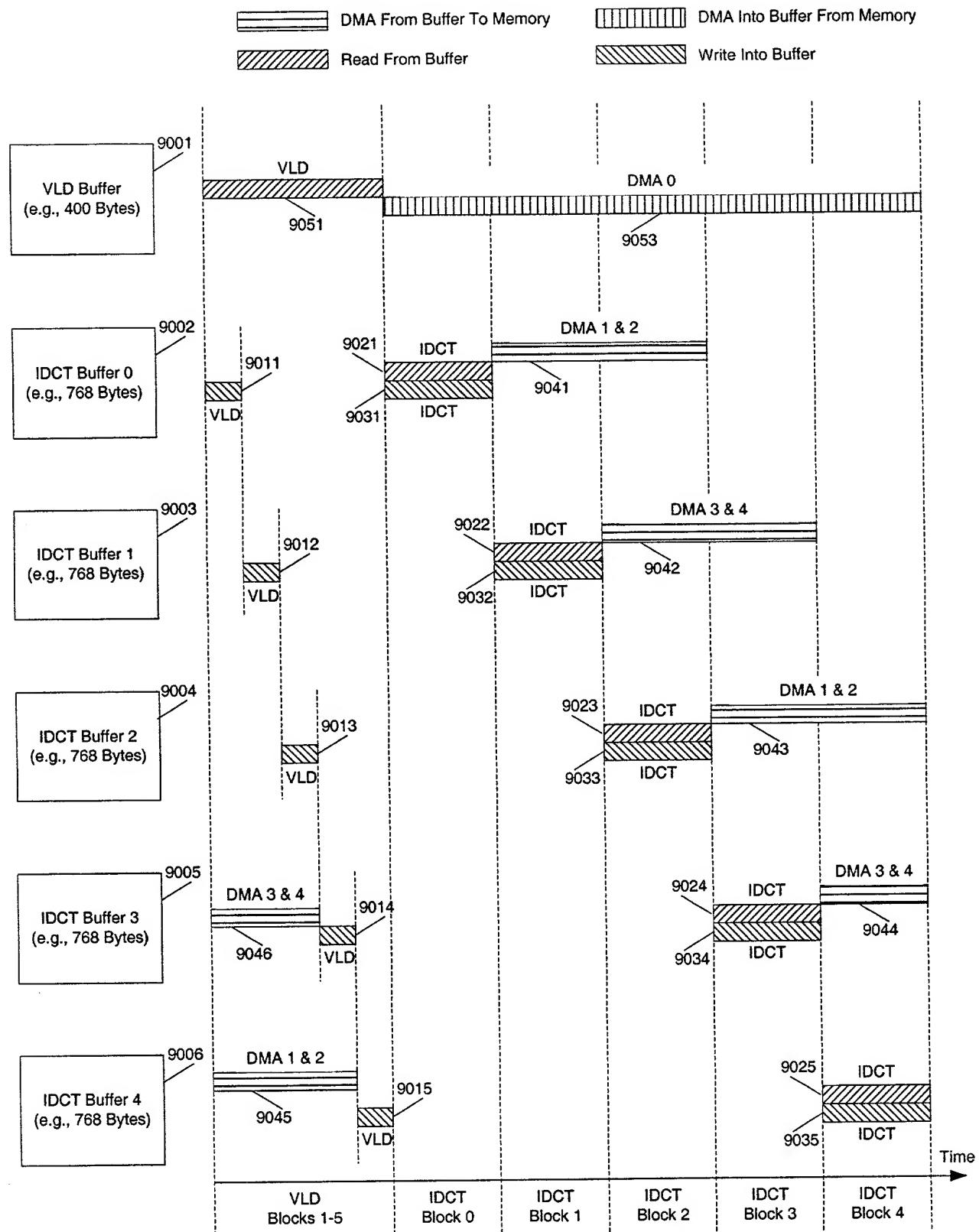


Fig. 70

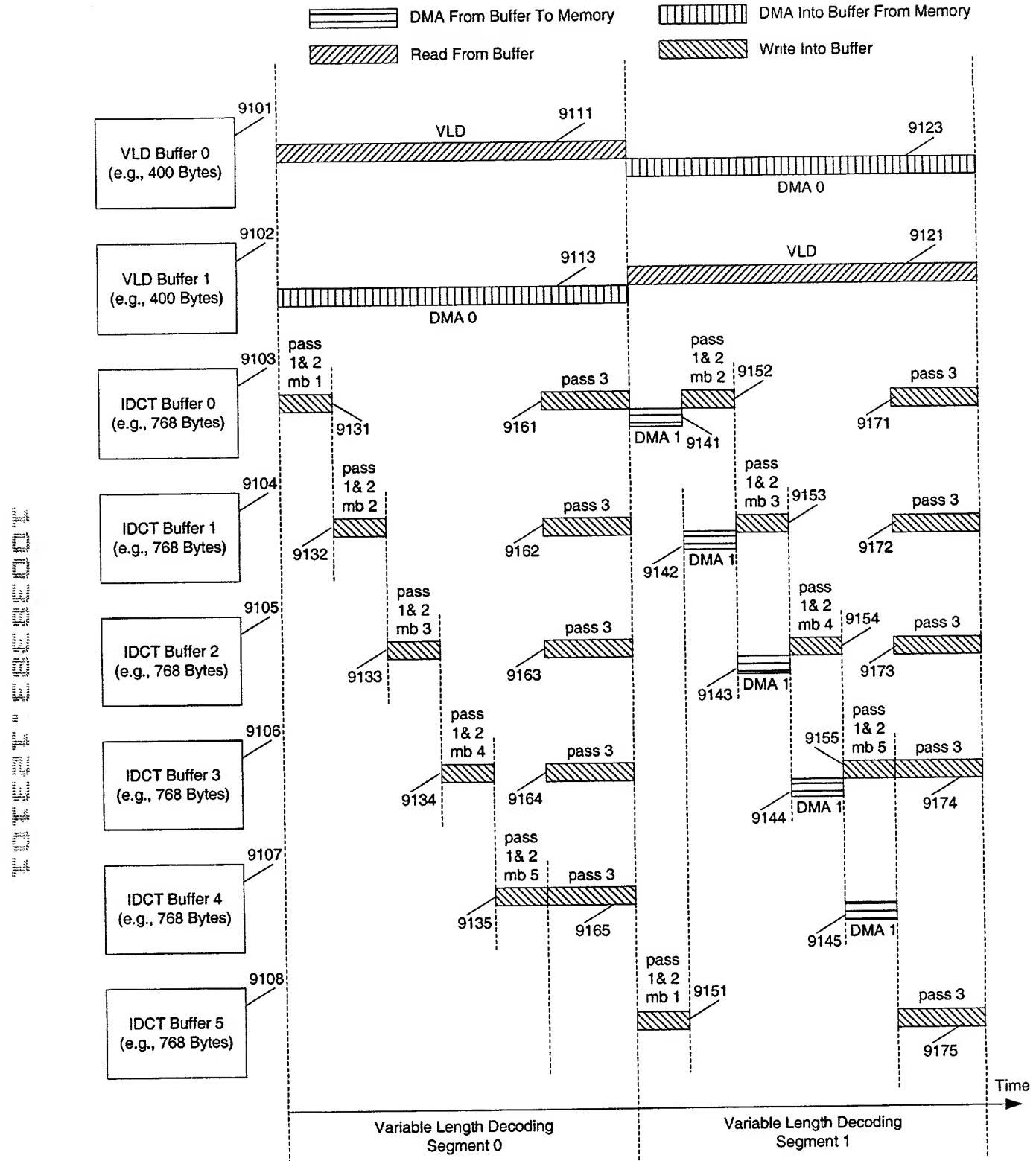


Fig. 71

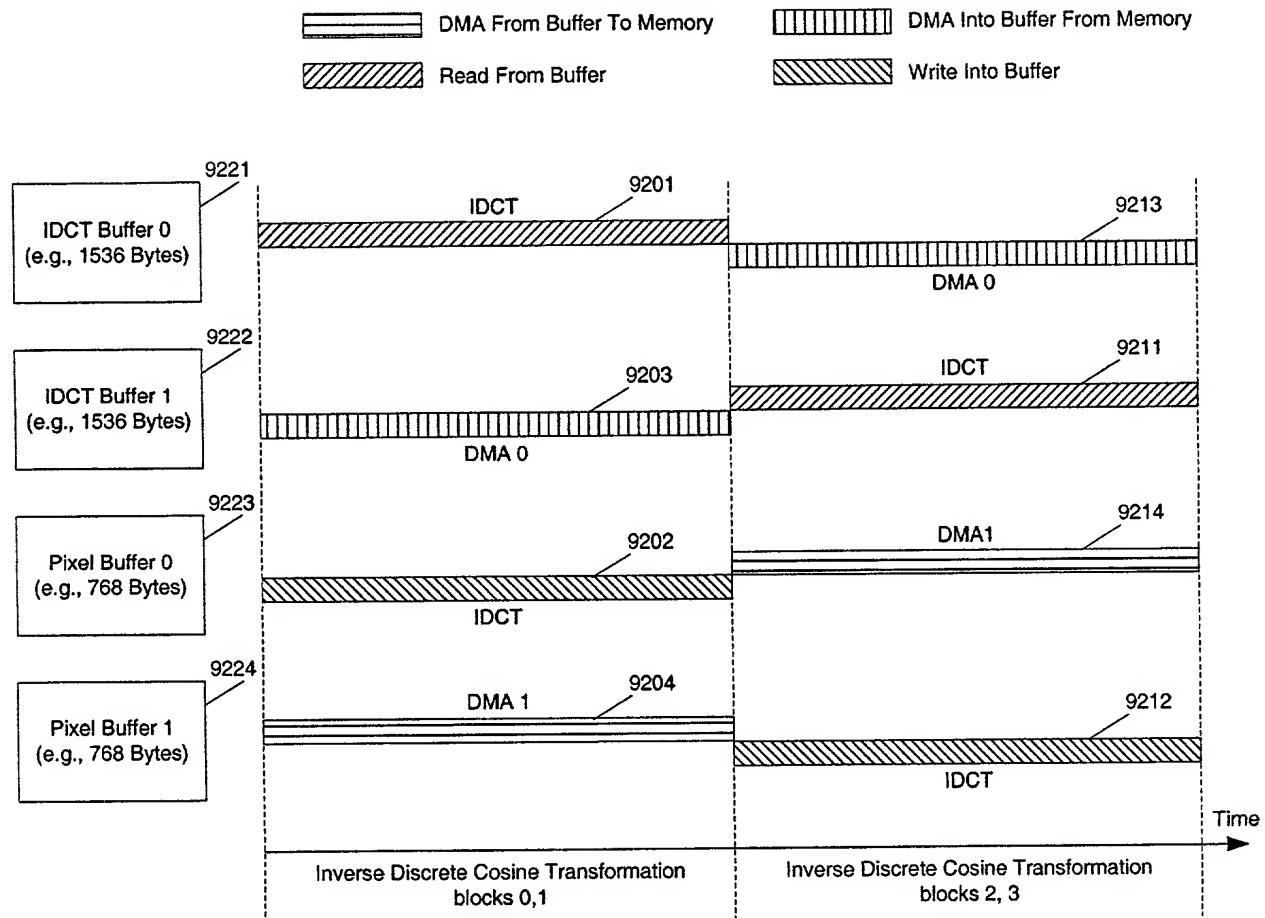


Fig. 72

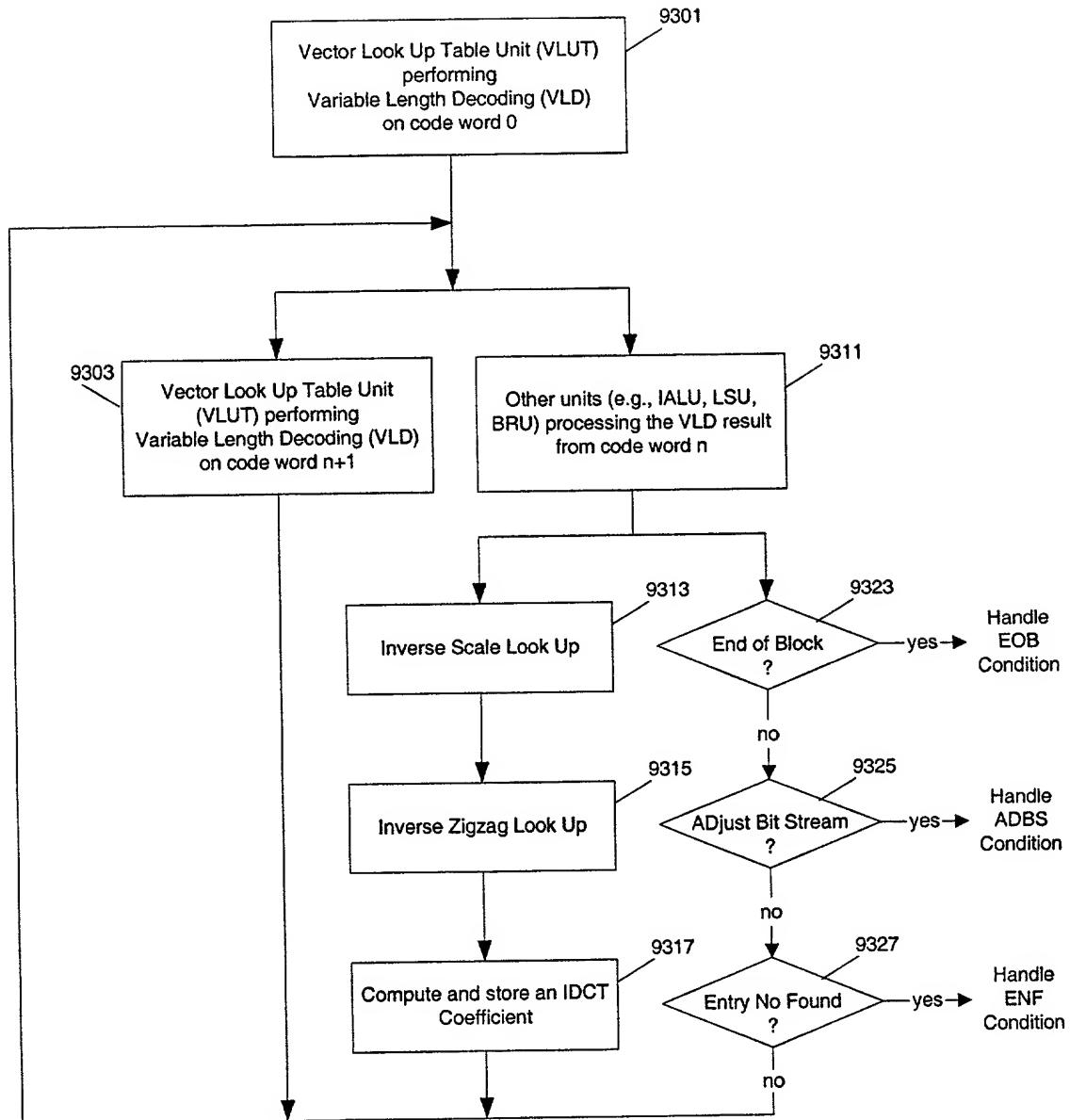


Fig. 73

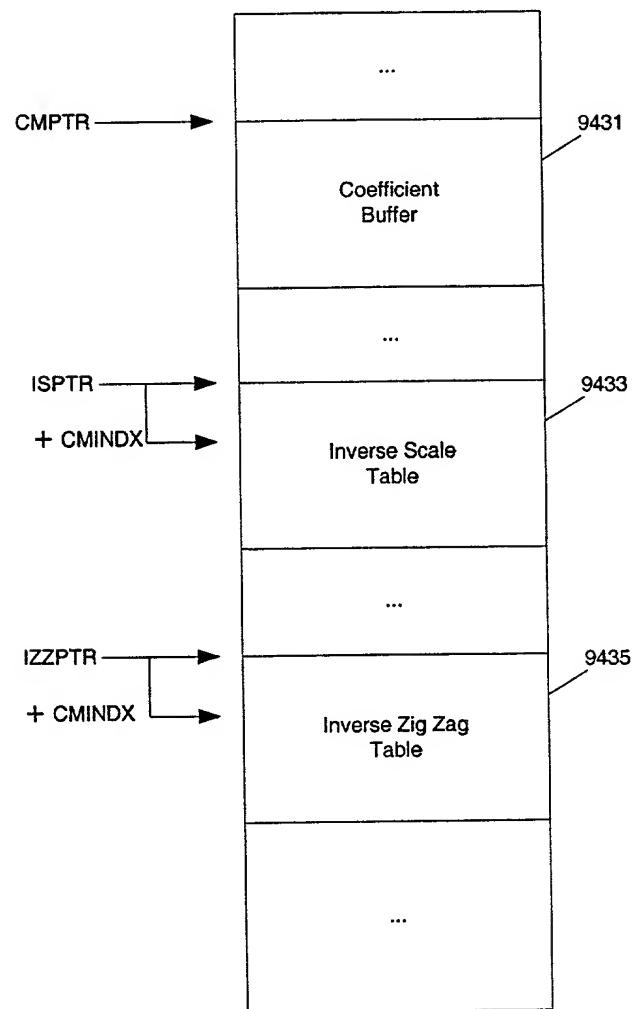
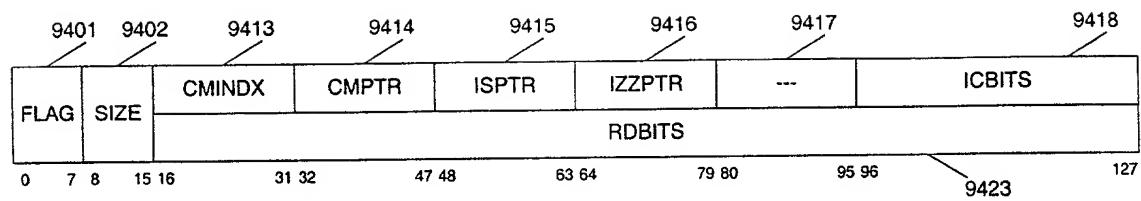


Fig. 74

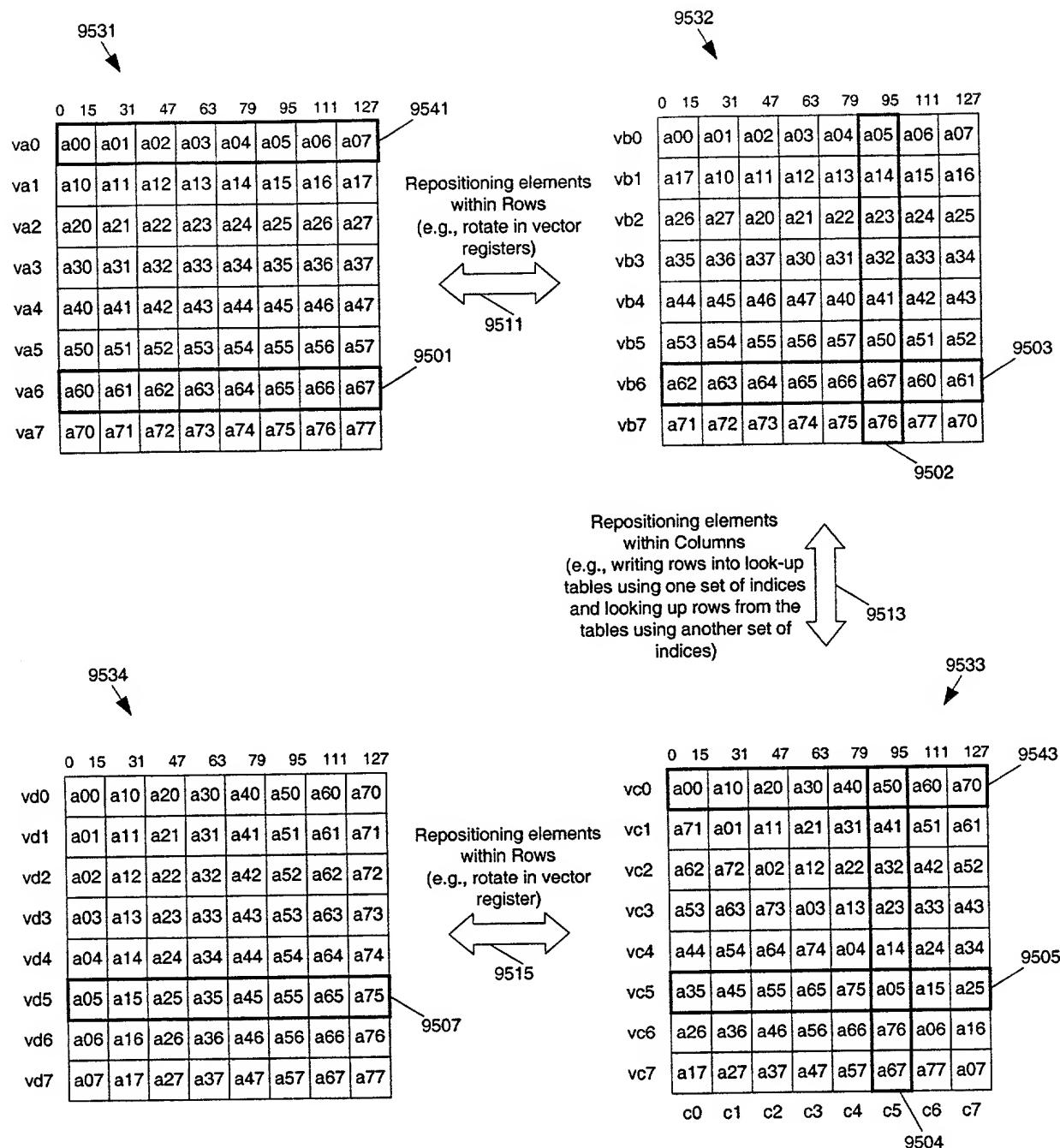


Fig. 75

9631

	0	7	15	23	31	39	47	55	63	71	79	87	95	103	111	119	127
vi0	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	
vi1	7	7	0	0	1	1	2	2	3	3	4	4	5	5	6	6	
vi2	6	6	7	7	0	0	1	1	2	2	3	3	4	4	5	5	
vi3	5	5	6	6	7	7	0	0	1	1	2	2	3	3	4	4	
vi4	4	4	5	5	6	6	7	7	0	0	1	1	2	2	3	3	
vi5	3	3	4	4	5	5	6	6	7	7	0	0	1	1	2	2	
vi6	2	2	3	3	4	4	5	5	6	6	7	7	0	0	1	1	
vi7	1	1	2	2	3	3	4	4	5	5	6	6	7	7	0	0	

T0 T1 T2 T3 T4 T5 T6 T7 T8 T9 T10 T11 T12 T13 T14 T15

9633

	0	7	15	23	31	39	47	55	63	71	79	87	95	103	111	119	127
vj0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
vj1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
vj2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
vj3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
vj4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
vj5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
vj6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
vj7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	

T0 T1 T2 T3 T4 T5 T6 T7 T8 T9 T10 T11 T12 T13 T14 T15

Fig. 76

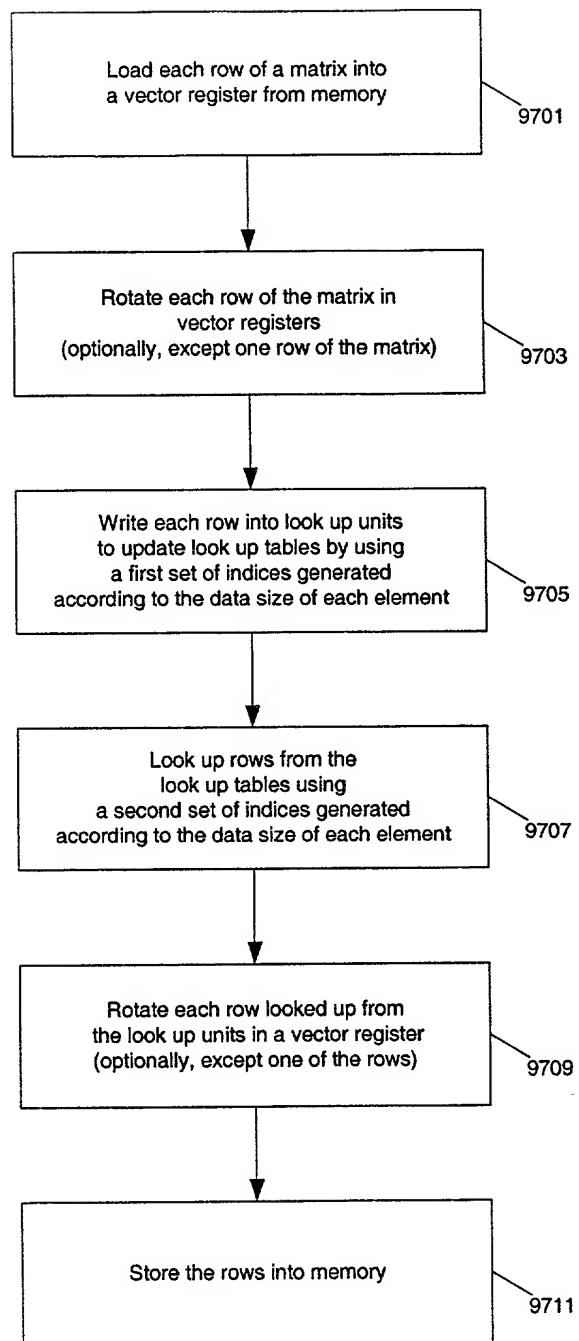


Fig. 77

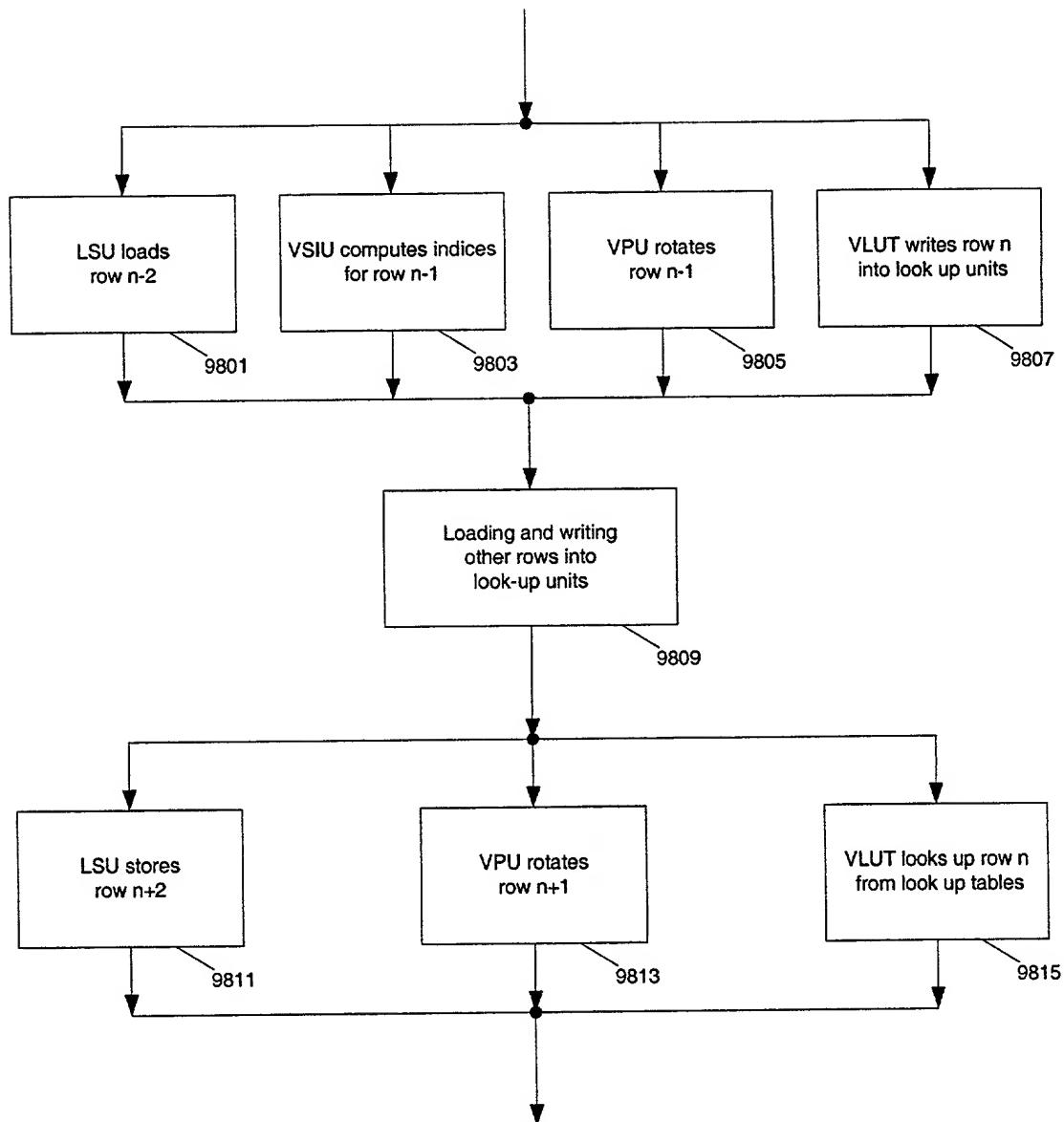


Fig. 78

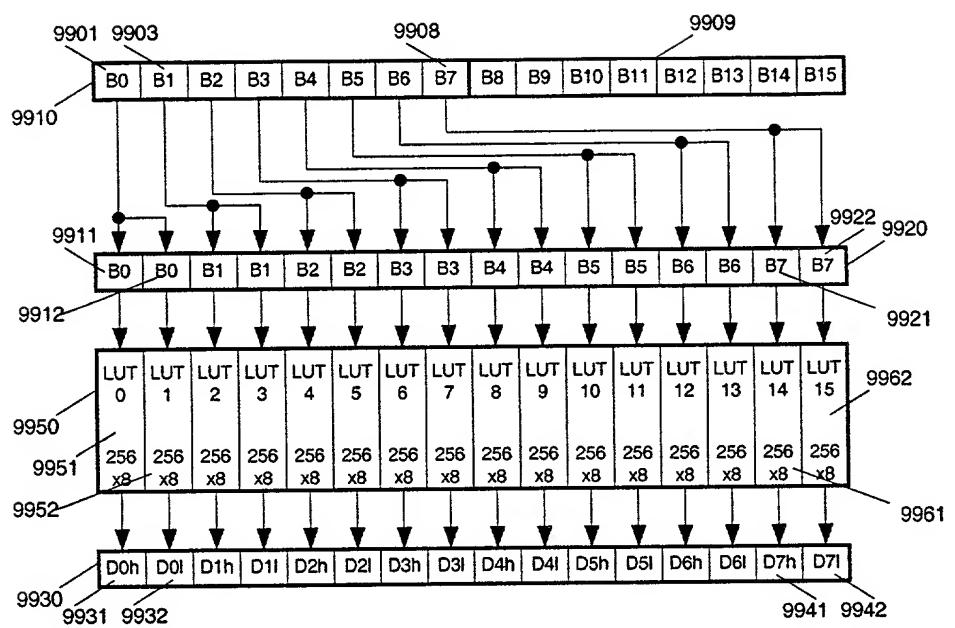


Fig. 79

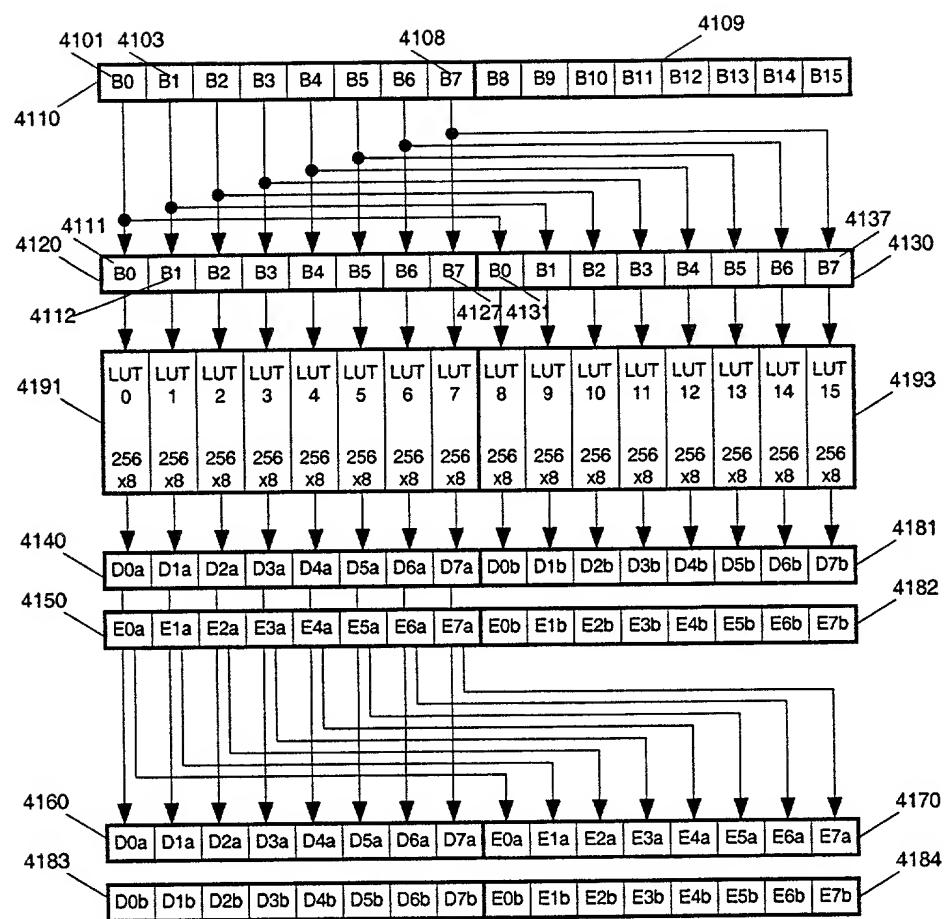


Fig. 80

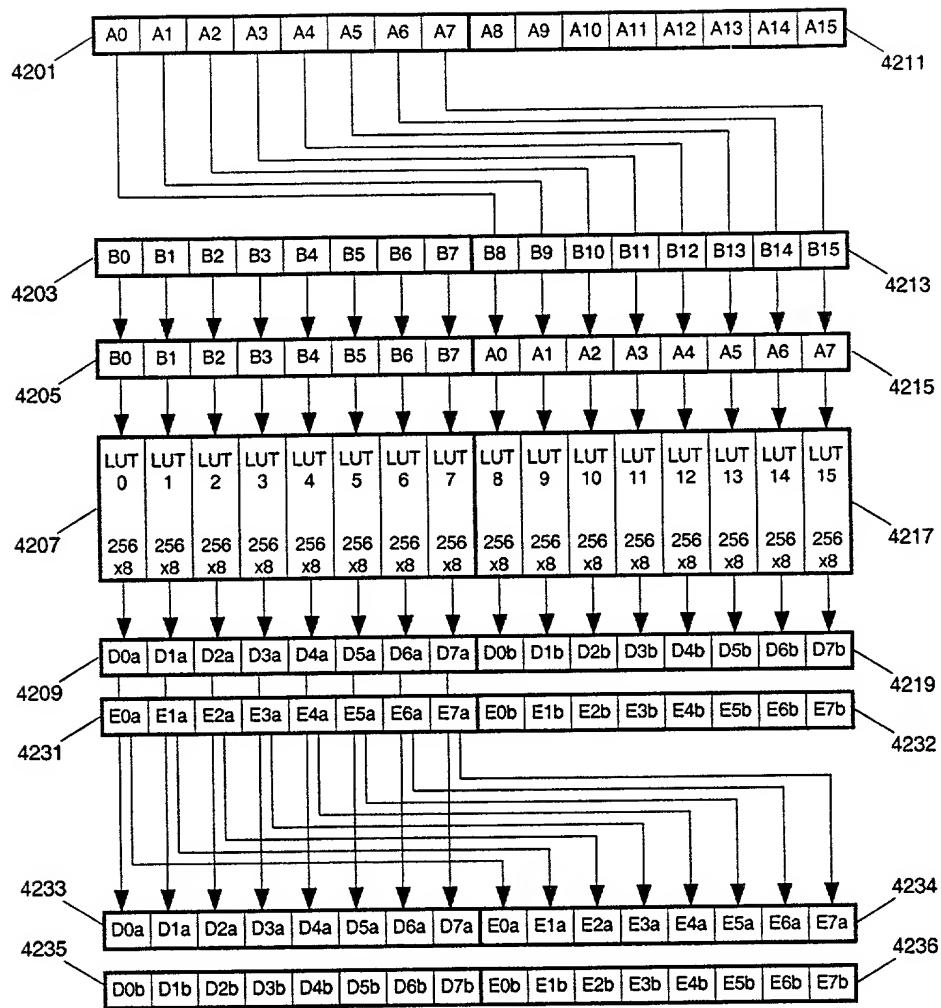


Fig. 81

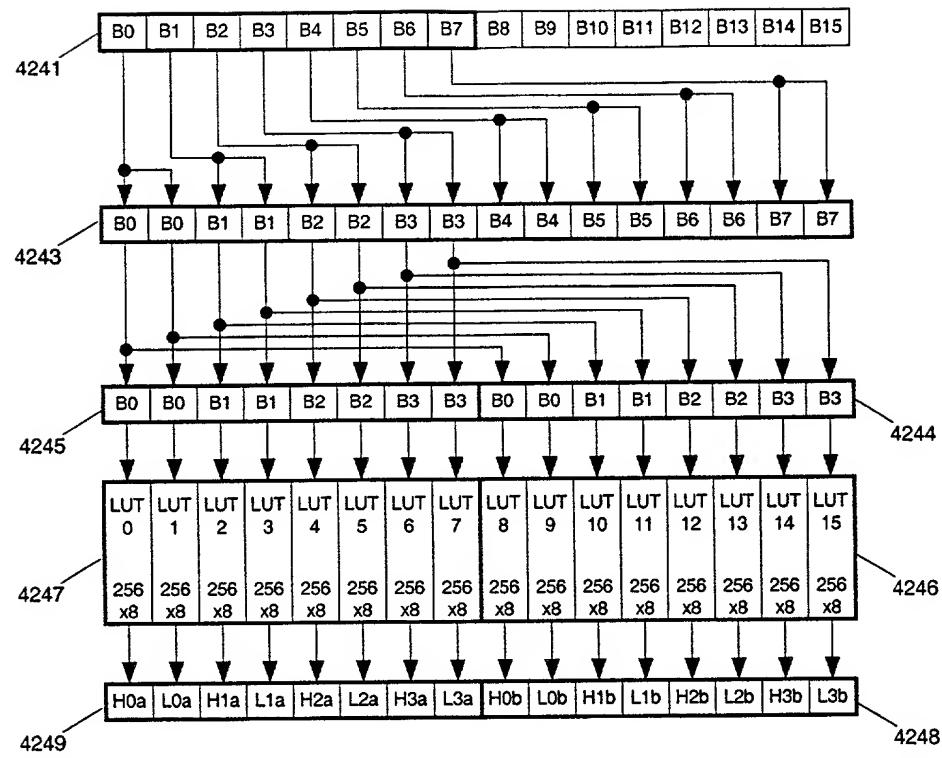


Fig. 82

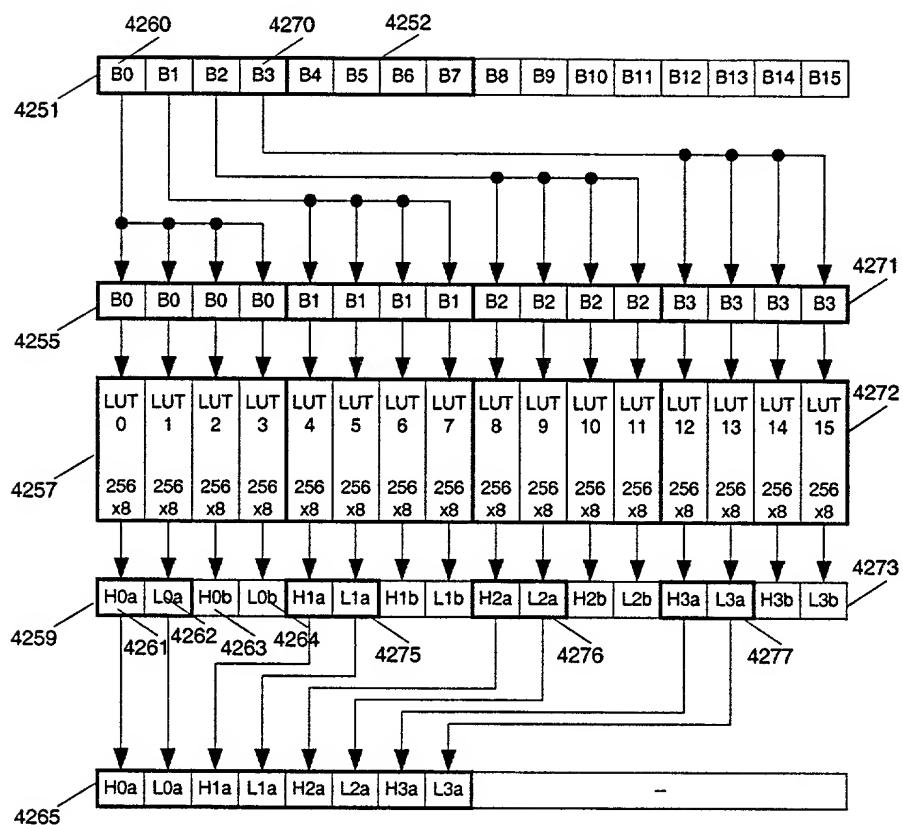


Fig. 83

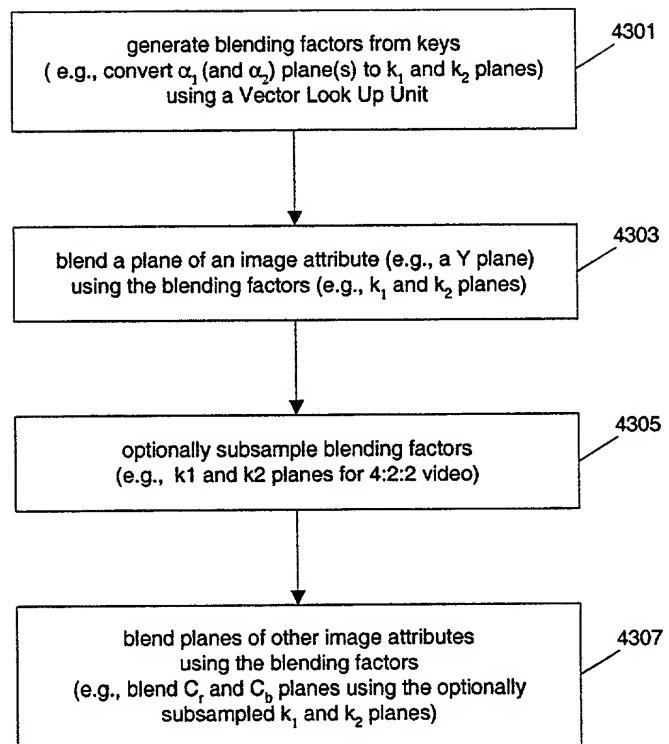


Fig. 84

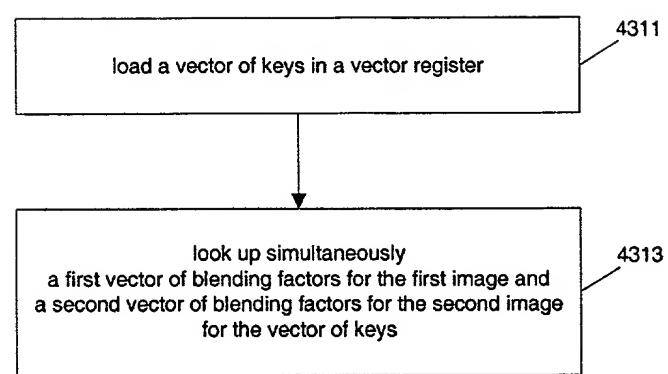


Fig. 85

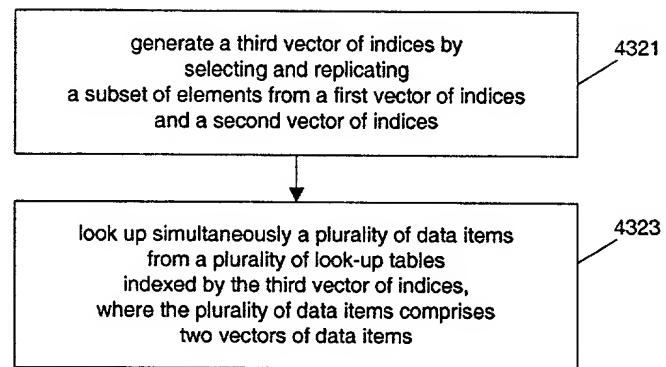


Fig. 86

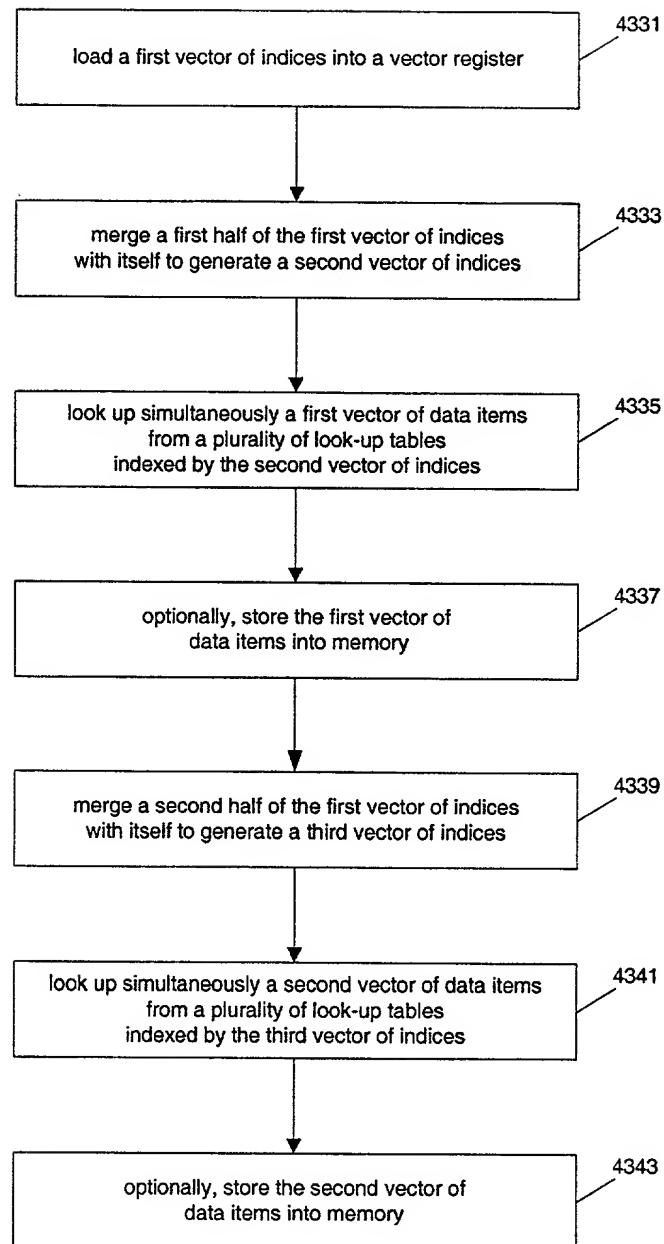


Fig. 87

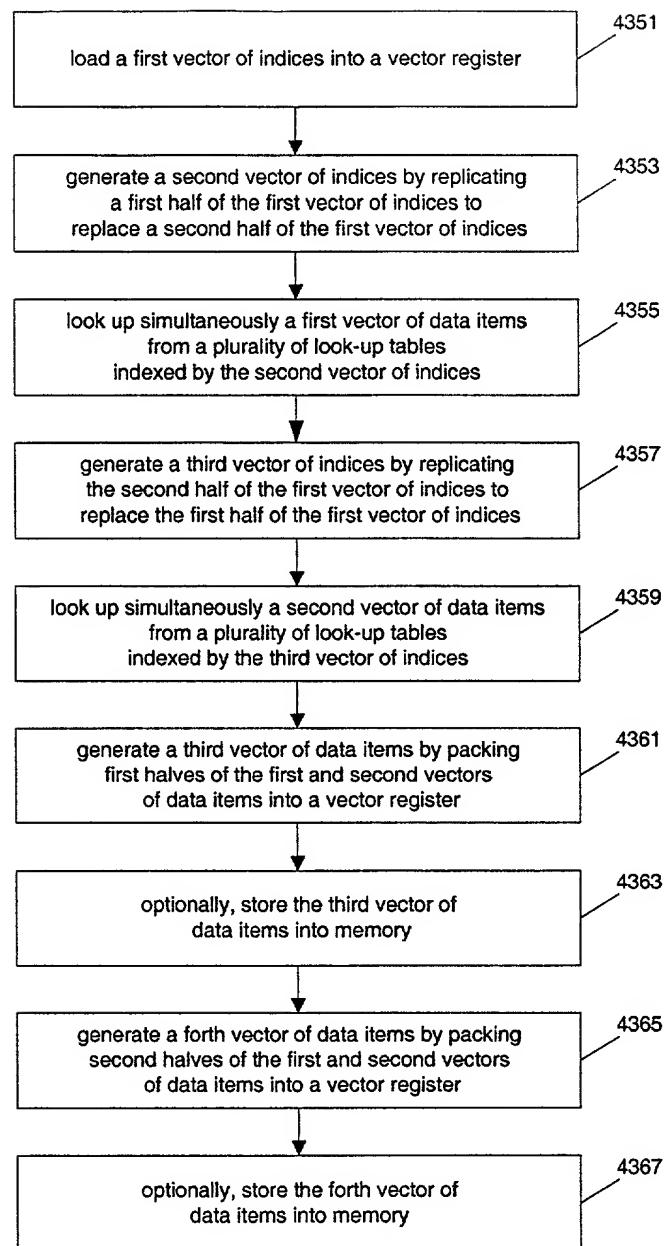


Fig. 88

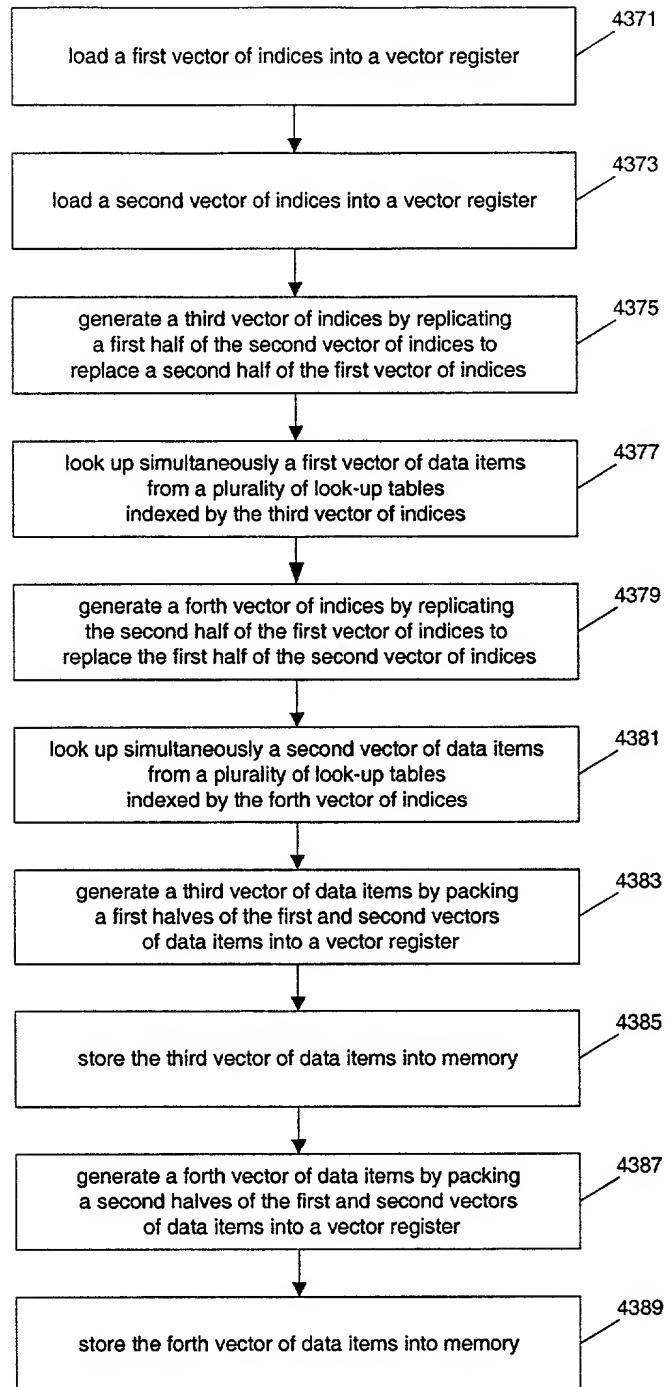


Fig. 89

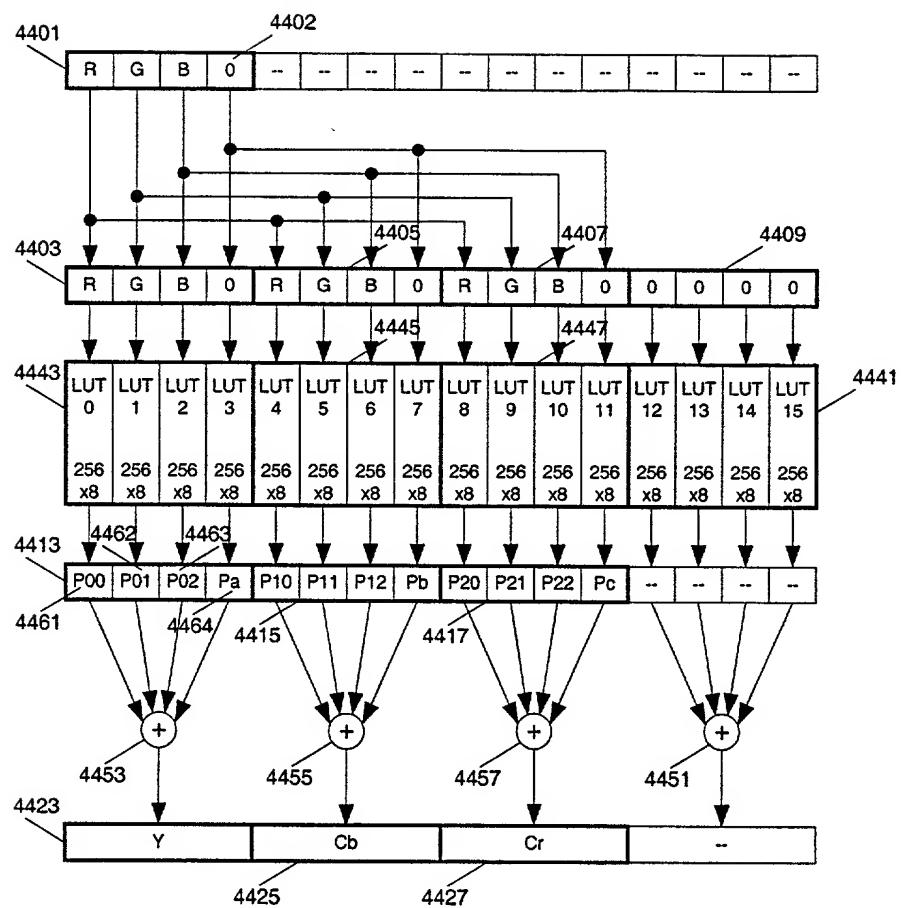


Fig. 90

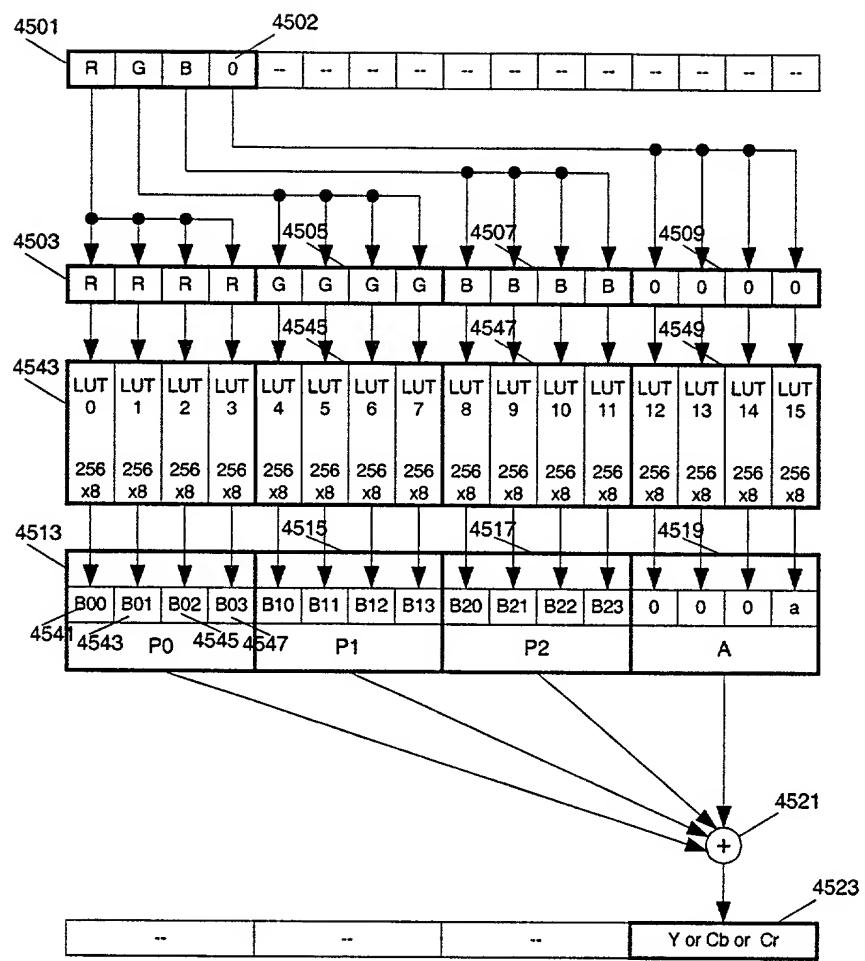


Fig. 91

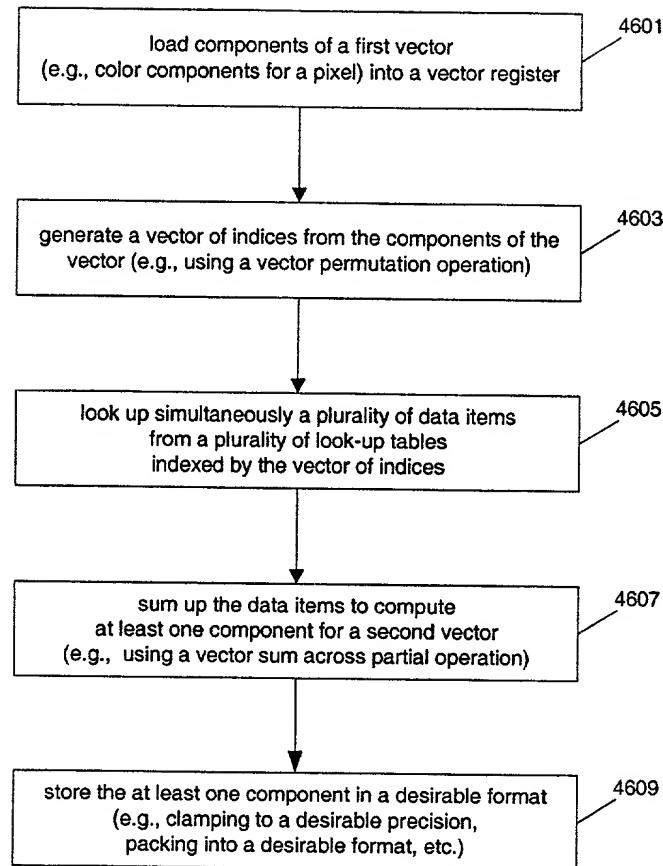


Fig. 92

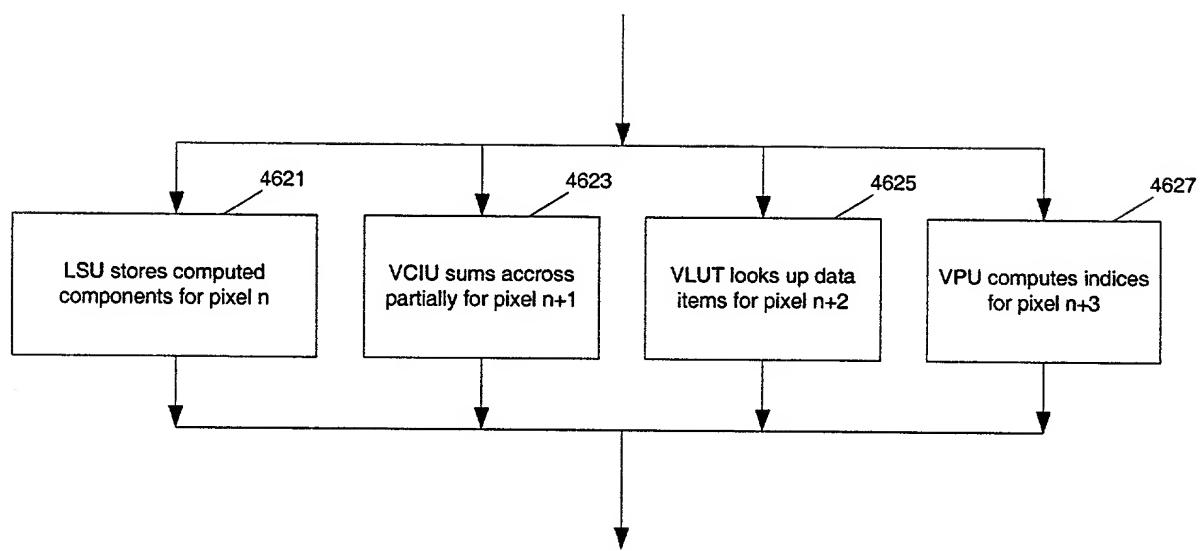


Fig. 93

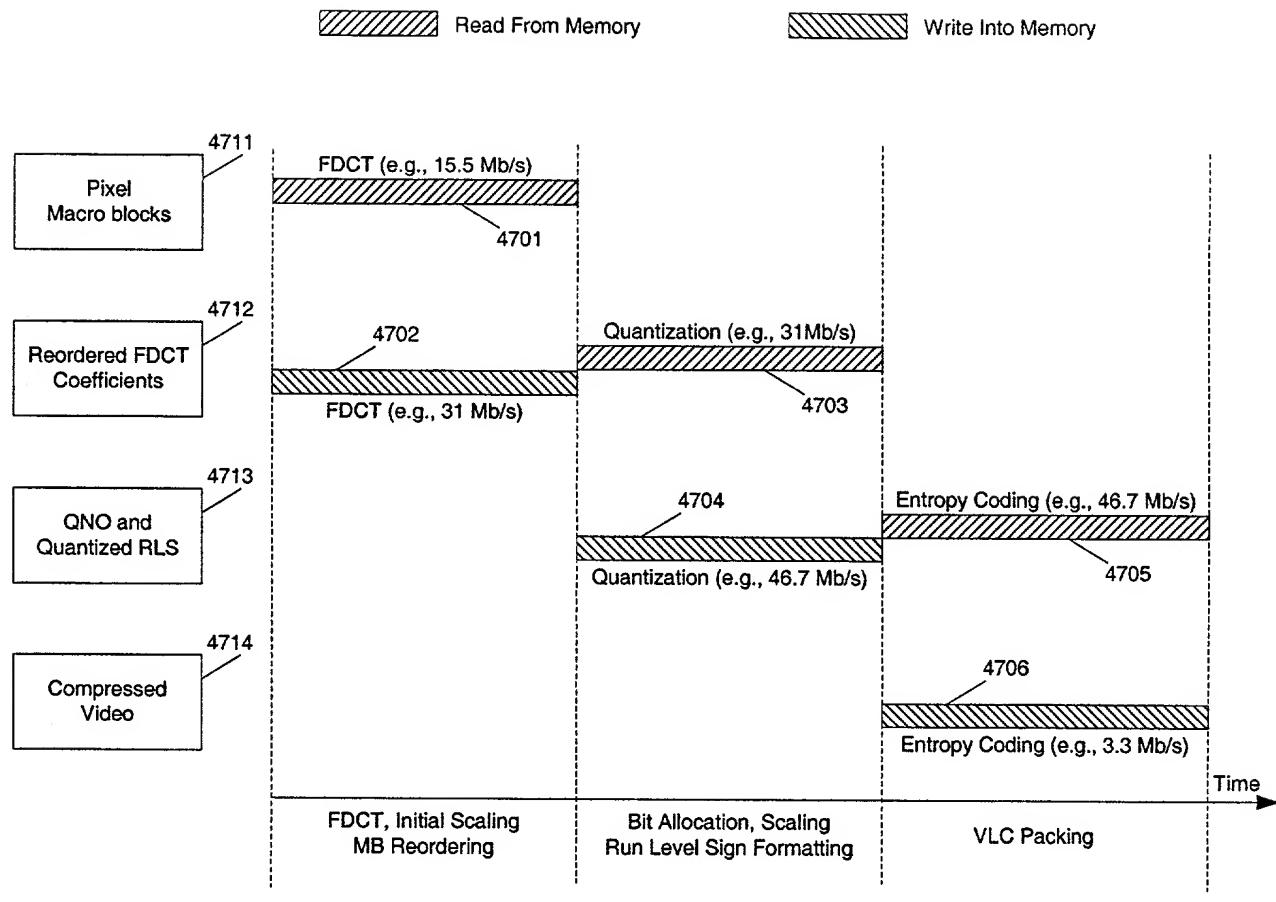


Fig. 94

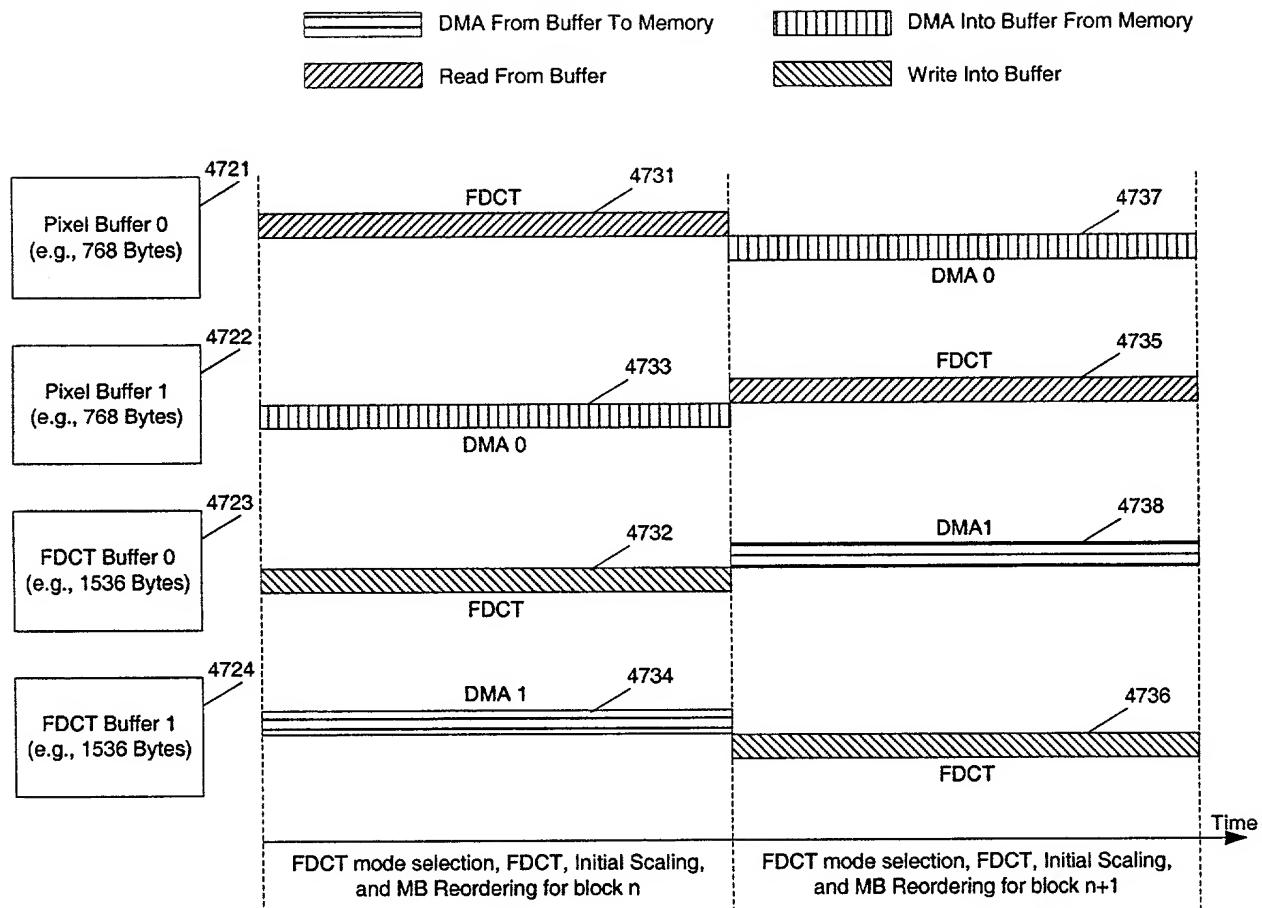


Fig. 95

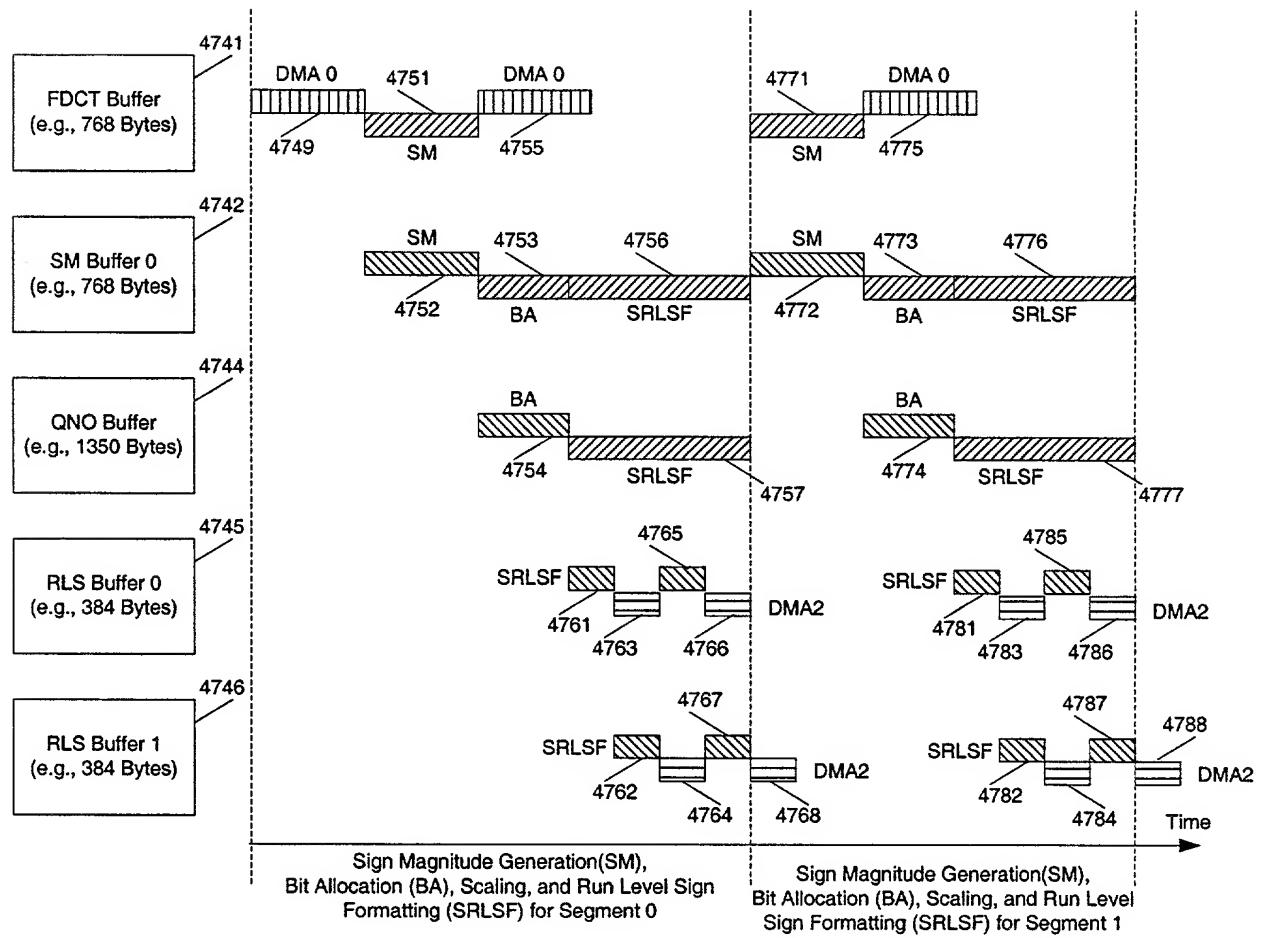
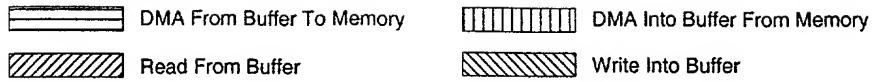


Fig. 96

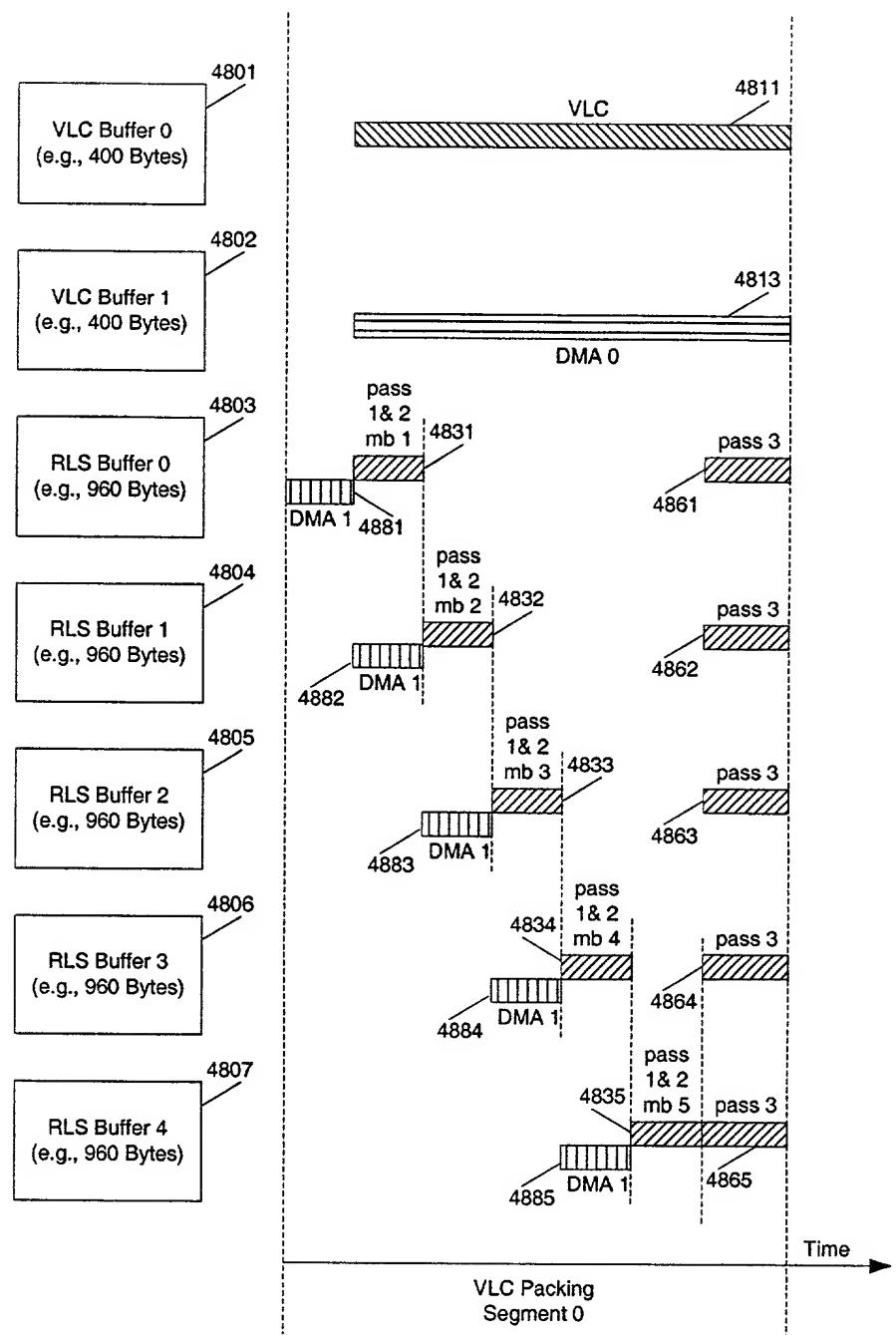
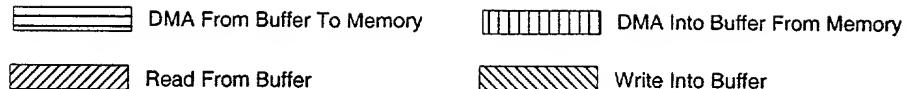


Fig. 97